PHASE 7.2
OPL
USER'S MANUAL

Continental Girbau, Inc.®
2500 State Road 44
Oshkosh WI 54904
Telephone: (920) 231-8222 / Fax: (920) 231-4666
E-mail: www.cont-girbau.com

012003JEV/wmarelli

CGIA Part No. 113167

Retain This Manual In A Safe Place For Future Reference

Please read this manual carefully to thoroughly familiarize yourself with the Phase 7 OPL computer system features, operational instructions, and programming characteristics. This manual contains important information on how to employ **ALL** the features of your new dryer in the safest and most economical way.

This product embodies advanced concepts in engineering, design, and safety. If this product is properly maintained, it will provide many years of safe, efficient, and trouble-free operation.

We have tried to make this manual as complete as possible and hope you will find it useful. Manufacturer reserves the right to make changes from time to time, without notice or obligation, in prices, specifications, colors, and material, and to change or discontinue models.

"IMPORTANT NOTE TO PURCHASER"

Information **must be** obtained from your local gas supplier on the instructions to be followed if the user smells gas. These instructions **must be** posted in a prominent location near the dryer.

Table of Contents

SECTION I
INTRODUCTION 3

SECTION II
FEATURES 4
A. Dependable Microprocessor Solid State Integrated Circuitry 4
B. Sensor Activated Fire Extinguishing (S.A.F.E.) System 4
C. Program Changes Are Easily Made At The Keyboard (Touch Pad) 4
D. Automatic Drying Cycle (Patent No. 4,827,627) 4
E. Timed (Manual) Drying Cycle 4
F. Preprogrammed Cycles 4
G. Manually Loaded Cycles 4
H. Variable (Programmable) Fabric/Temperature Selections 4
I. Cool Down/Controlled Cool Down Program 4
J. L.E.D. Display 4
K. Wrinkle Guard Program 4
L. Diagnostics 4
M. Audio Alert Signal 4
N. Temperature Conversion Status 4
O. High-Temperature Protection 5
P. Cycle Preview 5
Q. Reversing Option 5
R. RPM 5
S. Clean Lint 5
T. Language Selection 5
U. Model Selection 5
V. Default Factory Settings 5
W. Keyboard (Touch Pad) Symbols 5
X. Steam Injection Option 5

SECTION III
PROGRAM SELECTIONS 6
A. Preprogrammed Cycles 6
B. Manually Loaded Cycles 7
C. Automatic Drying Cycle (Patent No. 4,827,627) Operations 8
D. Timed (Manual) Drying Cycle Operation 8
E. Light Emitting Diode (L.E.D.) Dot Matrix Display 8
F. Cycle In Progress Temperature Display 9
G. Temperature Conversion Status 9
H. Wrinkle Guard Program 9
I. Audio Alert On Times 0 to 10 10
J. Preprogrammed Cycle Preview 10
K. Reversing Option 10
L. Diagnostics 10
M. Program Locations 11

SECTION IV
OPERATING INSTRUCTIONS 13
A. Operating Sequence 13
B. Operating Notes 17
C. Rev 2.2 Sensor Activated Fire Extinguishing (S.A.F.E.) System Theory of Operation 18

SECTION V
L.E.D. DISPLAY MESSAGES 19
A. L.E.D. Display Operating Status 19

SECTION VI
PROGRAMMING INSTRUCTIONS 20
A. Introduction to Programming 20
B. Programming Flowcharts 22

SECTION VII
FACTORY PRESET PARAMETERS (PROGRAMS) 71
A. Cycle “A-F” Parameters (Programs) Preset By The Factory 71
B. Cycle “0-40” Parameters (Programs) Preset By The Factory 71

SECTION VIII
PHASE 7 OPL PROGRAMMING LIMITS 72
A. Preprogrammed Cycles 72
B. System Parameters (Program Locations) 73
C. Fixed Parameters 73

SECTION IX
PHASE 7 AUTO CYCLE (PATENT NO. 4,827,627) CYCLE ADJUSTMENT VALUES 74

SECTION X
PHASE 7 OPL SYSTEM DIAGNOSTICS 75
A. Diagnostic (L.E.D. Display) Fault Messages 75
B. Input/Output (I/O) Board Light Emitting Diode (L.E.D.) Indicators 76
C. Keyboard (Touch Pad) Layout 78

SECTION XI
CUSTOMER CUSTOM PARAMETER SETTINGS 79

SECTION I
INTRODUCTION

Phase 7 "On-Premise Laundry" Microprocessor Drying System

The Phase 7 On-Premise Laundry (OPL) Drying System has been designed with super performance in mind to provide for better temperature regulation, efficiency, performance, consistency, and faster drying times.

Among its many amenities, the Phase 7 OPL Drying System has a true Automatic Drying Cycle. The Phase 7 OPL Automatic Drying Cycle **(Patent No. 4,827,627)** principle is based on one (1) of the most fundamental laws of thermodynamics, which governs the flow of heat in thermal systems.

Utilizing this microprocessor technology, the user simply has to place the load in the dryer and push one (1) single button to start the drying cycle. The Phase 7 OPL microprocessor controller (computer) will directly monitor the moisture content in the load and stop the drying cycle automatically when the selected dryness level is reached.

The Phase 7 OPL Automatic Drying Cycle **(Patent No. 4,827,627)** virtually eliminates **ALL** guess work. The Phase 7 OPL microprocessor controller (computer) determines how much drying time is needed and compensates for various types of fabrics and load sizes, thus, avoiding damage to fabrics by over drying, as well as avoiding wasted time and energy for any given load. Once the Phase 7 microprocessor controller (computer) determines the load is dry, the microprocessor controller (computer) will go into Cool Down Cycle until the preprogrammed time or temperature is reached, and then shuts the dryer off automatically.

SECTION II

FEATURES

A. **Dependable Microprocessor Solid State Integrated Circuitry** - To eliminate as many moving parts as possible.

B. **Sensor Activated Fire Extinguishing (S.A.F.E.) System** - A standard feature which continually monitors the basket (tumbler) for fires, in the event of a fire a water supply to the basket (tumbler) will suppress the fire. The Phase 7 OPL microprocessor controller (computer) will also notify the user that a fire has taken place.

C. **Program Changes Are Easily Made At The Keyboard (Touch Pad)** - Actual programs are viewed at the light emitting diode (L.E.D.) display for verification.

D. **Automatic Drying Cycle (Patent No. 4,827,627)** - Computerized monitoring of load dryness for precise, fast, and efficient drying.

E. **Timed (Manual) Drying Cycle** - For special loads, programming allows for a specific amount of time in minutes for both drying and Cool Down Cycles.

F. **Preprogrammed Cycles** - The Phase 7 OPL microprocessor controller (computer) can store in its memory six (6) preprogrammed cycles in either the Automatic Drying Mode **(Patent No. 4,827,627)** or Manual Drying Mode in the "A-F" keys and an additional 41 in the numerical memory of "0-40."

G. **Manually Loaded Cycles** - For occasional or onetime special loads, the user can set a specific program in either the Automatic Drying Cycle (**Patent No. 4,827,627)** or Manual Timed Drying Cycle.

H. **Variable (Programmable) Fabric/Temperature Selections** - Accommodates the type of fabric to be dried.

I. **Cool Down/Controlled Cool Down Program** - Cool down lowers the temperature of the exhaust to make the material cool enough to handle. Controlled cool down slowly lowers the temperature over 10 minutes for materials sensitive to shrinking.

J. **L.E.D. Display** - Informs user of cycle status, programs and displays important diagnostic and fault codes.

K. **Wrinkle Guard Program** - Helps keep items wrinkle-free when they are not removed from the dryer promptly at the end of the drying and cooling cycles.

L. **Diagnostics** - Major circuits, including the door switch(es), microprocessor temperature sensor and heat output circuits and more are individually monitored, give precise messages of your failure

M. **Audio Alert Signal** - The tone will sound at the end of a complete drying cycle at a 1-second rate for the duration programmed. It will also sound for any fault conditions at a quarter second rate for 4-beeps. Finally there is a 3-beep warning at the beginning of every Wrinkle Guard On Cycle a continuous rapid pulse is used for the entire duration of S.A.F.E. system activation. A connection is also available to install an external 24VDC (volts direct current) buzzer or relay with a maximum power consumption of 250 mA (milliamperes).

N. **Temperature Conversion Status** - Temperature-related programs can be set in either Fahrenheit (ºF) or Celsius (ºC). **ALL** temperatures will automatically convert to the corresponding values (+/- 1º) when changes are made.

O. **High-Temperature Protection** - If the Phase 7 OPL microprocessor controller (computer) senses that the temperature in the basket (tumbler) has exceeded 180º F (82º C) for axial airflow, 220º F (104º C) for radial airflow and it will end the drying cycle and a fault code will be displayed, indicating an overheating problem.

P. **Cycle Preview** - Entire dryer parameters (programs) or the preprogrammed cycles are displayed for verification upon a coded entry to the keyboard (touch pad).

Q. **Reversing Option** - Helps reduce the balling up or tangling of large items. A cycle can be set to have the reversing option where the basket (tumbler) will turn in the forward direction from 30- to 120-seconds, stop from 5- to 10-seconds, and then proceed in the reverse direction for the same time. This process is repeated throughout the drying and cooling cycles.

R. **RPM** - Phase 7 microprocessor controller (computer) also displays basket (tumbler) RPM by pressing and holding the "DOWN ARROW" key and holding it while the basket (tumbler) is on. (The basket [tumbler] **must be** rotating for approximately 30-seconds before getting a true RPM reading).

S. **Clean Lint** - This feature monitors the value of the "Lint Count" register. The register contains the acceptable limit of dryer cycles the machine will be allowed to operate before the microprocessor locks the user out. Once the feature prompts the user to "CLEAN LINT ACCESS" the dryer is now in a locked state and will not be cleared until the lint drawer has been cleaned. When the lint drawer is opened, the display will read "LINT ACCESS OPEN" and when the lint drawer is closed, the display will read "READY." **(NOTE:** The lint drawer **must be** opened for 15-seconds or more for the reset to occur.) The dryer circuit is now active and can be programmed.

T. **Language Selection** - Phase 7 has the ability to display 5 different languages, English, French, Spanish, Italian, and German.

U. **Model Selection** - The Phase 7 can be programmed to be used on 3 modes of heat, gas, steam and electric. It can also be configured for reversing and non-reversing dryers.

V. **Default Factory Settings** - This feature will set **ALL** programmed parameters to their default values.

W. **Keyboard (Touch Pad) Symbols** -

= "STOP/CLEAR" key

= "START/ENTER" key

= "UP ARROW" key (scroll up)

= "DOWN ARROW" key (scroll down)

X. **Steam Injection Option** - The Phase 7 has the ability to program up to 5 steam injection intervals for a programmed amount of time at different points of a cycle including cool down.

SECTION III
PROGRAM SELECTIONS

A. PREPROGRAMMED CYCLES

"A-F" CYCLES

The Phase 7 OPL microprocessor controller (computer) can store in its memory six (6) preprogrammed cycles (keys "A-F" on the keyboard [touch pad]). This allows the user to have the six (6) most commonly used cycles, requiring only the push of a single keyboard (touch pad) entry to start the dryer.

"0-40" CYCLES

The Phase 7 OPL microprocessor controller (computer) can store 41 preprogrammed cycles in its numerical memory. (Use keys "0-9" on the keyboard [touch pad]). This allows the user to have up to 41 customized programmed cycles that may not be as commonly used as the six (6) "A-F." These are not one (1) touch entries to start the dryer like the "A-F." They are selected by entering the number, which represents the cycle desired and pressing the "START/ENTER" key to start the cycle.

Both types of the preprogrammed cycles can be set in either the Automatic Drying Mode **(Patent 4,827,627)**, where the drying cycle will end when the selected dryness level has been reached, or in the Manual Timed Drying Mode where the dryer will operate for the specific drying time programmed. These cycles can be programmed in any combination.

Once the heating cycle is completed, the Phase 7 OPL microprocessor controller (computer) then goes into the Cool Down Cycle where the articles are tumbled at room temperature or a controlled cool down where the dryer goes into a slow cool down mode for 10 minutes sloping the temperature 10º F (5.5º C) every minute.

When the cooling cycle is completed, the dryer will go into the Wrinkle Guard Cycle. Where the load will be tumbled without heat for 2 minutes. It will then stop for 2 minutes. This process is repeated until either the doors are opened, the "STOP" key pressed, or 99 minutes has elapsed, whichever comes first. When Wrinkle Guard is ended, the display will read "CYCLE DONE." At this point the dryer is locked out from drying again until the doors are opened. This will insure that if a cycle has been completed, the operator will attend to it, before starting another heat cycle.

NOTE: To enter program mode press clear/stop and the ▲ up arrow.

PREPROGRAMMED CYCLE MENU SELECTIONS (CYCLES "A-F" or "0-40"):

1. Automatic Drying Cycle **(Patent No. 4,827,627)**

    a. The Phase 7 OPL microprocessor controller (computer) can be programmed to reverse or not reverse. This is done in "DRYER SETUP" parameter.

    b. Drying Temperature - Programmable from 160º F to 200º F (71º C to 93º C) in one-degree increments and preset at 160º F (71º C) for axial.

c. Dryness Level - Programmable for finishing, dry, and extra dry.

d. Cool Down Time - Programmable from 0 to 99 minutes in 1 minute increments.

e. Cool Down Temperature - Programmable from 70º F to 100º F (21º C to 38º C) in one-degree increments.

f. Cycle Adjustment - Programmable from 0 to 99.

2. Timed (Manual) Cycle

a. The Phase 7 OPL microprocessor controller (computer) can be programmed to reverse or not reverse. This is done in "DRYER SETUP" parameter.

b. Drying Time - Programmable from 0 to 99 minutes in 1 minute increments.

c. Drying Temperature - Programmable from 100º F to 200º F (38º C to 93º C) in one-degree increments.

d. Cool Down Time - Programmable from 0 to 99 minutes in 1 minute increments.

e. Cool Down Temperature - Programmable from 70º F to 100º F (21º C to 38º C) in one-degree increments.

f. The Spin Time can be programmed from 30-seconds to 120-seconds in 1-second increments.

g. The Dwell (Stop) Time can be programmed from 5-seconds to 10-seconds in 1-second increments.

h. Steam Injection (Optional) - Programmable 0-5 intervals.

ALL six (6) "A-F" preprogrammed cycles along with cycles "0-40" have been programmed by the factory as outlined in **Section VII**. However, even though cycles "A-F" are the most common cycles used, they **should be** reviewed to ensure they meet the location application or needs. Should changes be found necessary, refer to the Programming Section of this manual.

B. MANUALLY LOADED CYCLES

For occasional or onetime special loads, the operator **must enter** the specific program features needed. This cycle is not stored within the Phase 7 OPL microprocessor controller (computer) and **must be** entered each and every time.

The Manually Loaded Cycle can be set in either the Automatic Drying Mode **(Patent No. 4,827,627)** or the Timed (Manual) Drying Mode. These are selected by pressing the "AUTO" or "MAN" keys on the keyboard (touch pad).

C. AUTOMATIC DRYING CYCLE **(PATENT NO. 4,827,627)** OPERATIONS

In this mode, the Phase 7 OPL microprocessor controller (computer) determines how much drying time is needed and compensates for various types of fabrics and load sizes, **ALL** automatically. The Phase 7 OPL microprocessor controller (computer) accomplishes this by calculating the dryness level (percentage of extraction) using the temperature selected, as well as, the dryness level preset by the factory.

The Phase 7 OPL microprocessor controller (computer) monitors the first three (3) heat peaks (slopes), at which time it calculates the dryness level (heat loss) along with the percentage of extraction selected. When the Phase 7 OPL microprocessor controller (computer) determines that **ALL** the factors are met, the drying cycle will end, and the dryer will go into the Cool Down Cycle.

D. TIMED (MANUAL) DRYING CYCLE OPERATION

This drying cycle is intended for special loads where a specific amount of drying time and cooling time is needed, especially for fine, delicate items which require very low temperatures and long drying and/or Cool Down Time periods.

ALL the parameters set in "COOL DOWN SETUP" pertain to the Manually Loaded Manual and Auto Cycles. The "A-F" and "0-40" cycles that have been selected to be manual, have separate settings for **ALL** the parameters contained in the "COOL DOWN SETUP" menu.

The program limitation is the same as in Section III A2.

NOTE: The Cool Down Cycle will run either until the Cool Down Temperature is reached or until the Cool Down Time has expired, whichever comes first.

NOTE: If there has been no Drying Time selected, then the Cool Down Cycle will ignore the Cool Down Temperature and do the Cool Down Time only.

E. LIGHT EMITTING DIODE (L.E.D.) DOT MATRIX DISPLAY

The L.E.D. display informs the user of cycle status, program verification, and displays important diagnostic and fault information. A complete listing of the various display messages and their meanings are shown in **Section V** of this manual.

CYCLE IN PROGRESS DISPLAY STATUS

During the Drying Cycle, the display will indicate the type of cycle in progress by presenting either one (1) of the following:

1. "AUTO DRYING CYCLE" - Manually Loaded Auto Cycle.
2. "AUTO DRYING CYCLE #" - The "#" is replaced with "A-F" or "0-40."
3. "MANUAL DRYING CYCLE" - Manually Loaded Manual Cycle.
4. "MANUAL DRYING CYCLE #" - The "#" is replaced with "A-F" or "0-40."

F. CYCLE IN PROGRESS TEMPERATURE DISPLAY

While the dryer cycle is in progress, the temperature in the basket (tumbler) can be displayed by pressing and holding the "UP ARROW" key. The temperature will be displayed in either Fahrenheit (ºF) or Celsius (ºC), depending on what the system temperature has been set for in "DRYER SETUP."

G. TEMPERATURE CONVERSION STATUS

Temperature related programs are programmable to be operated in either Fahrenheit (ºF) or Celsius (ºC). The temperature selection is made in "SYSTEM TEMP." Programs affected are:

1. Temperature Display Mode
2. Drying Temperatures
3. Cool Down Temperatures

IMPORTANT: When changing the temperature conversion status from Fahrenheit to Celsius or vice versa, **ALL** the Temperature Selections and Cool Down Temperatures **will be** changed accordingly. The Phase 7 OPL microprocessor controller (computer) automatically calculates and converts the temperatures in these programs to the previously set value. For example, when changing from ºF to ºC, if the preprogrammed Cycle "A" drying temperature was set for 160º F, the Phase 7 OPL microprocessor controller (computer) will change to 71º C (+/- [1] one-degree Celsius).

H. WRINKLE GUARD PROGRAM

This program keeps items wrinkle-free when they are not removed from the dryer promptly at the end of the drying cycle and/or cooling cycle.

When the drying and cooling cycles are completed, the dryer will shut off, the tone will sound, and the light emitting diode (L.E.D.) display will read "WRINKLE GUARD." If the door is not opened or the cycle stopped, the Phase 7 OPL microprocessor controller (computer) will wait until the Wrinkle Guard Delay Time of 2 minutes has expired, at which time the fan will start and the basket (tumbler) will rotate (without heat) for the Wrinkle Guard On Time of 2 minutes. The Phase 7 OPL microprocessor controller (computer) will repeat this process until the Maximum Wrinkle Guard Time of 99 minutes has expired or until the door is opened, or cycle stopped, whichever comes first. Prior to each ON time, there is a 3-beep warning that the fan and basket (tumbler) rotation are about to start. The beeps at the end of the Wrinkle Guard Cycle can be programmed to be ON/OFF. This is done in "WRINKLE GUARD SETUP."

WRINKLE GUARD PROGRAM SELECTIONS:

1. Wrinkle Guard Audio Alert On/Off

   The operator can select to turn on or off the beeps at the end of each Wrinkle Guard Cycle. The amount of beeps are programmed in "AUDIO ALERT ON TIMES."

I. AUDIO ALERT ON TIMES 0 TO 10

The tone will sound at the end of the Cool Down Cycle to indicate that the cycle is complete. Programming allows for the elimination of the tone during the Wrinkle Guard Cycle. This is done in "WRINKLE GUARD SETUP." Programming also allows the beeps to be set from 0 to 10 times in increments of one (1). This is done in "DRYER SETUP."

J. PREPROGRAMMED CYCLE PREVIEW

The parameters of the preprogrammed cycles can be displayed for verification. To view an "A-F" preset program (parameter), simply press the "START/ENTER" key and the desired preset program "A-F." The light emitting diode (L.E.D.) display will read the program parameter settings, then return to the "READY" display mode. To view a "0-40" preset program parameter, simply press the "START/ENTER" key and the desired preset program number "0-40" followed by "START/ENTER" key again. The L.E.D. display will read the program parameter settings, then return to the "READY" display mode.

K. REVERSING OPTION

This feature helps reduce balling up or tangling of large items.

REVERSING OPTION SELECTIONS:

1. Reverse On or Reverse Off
2. This Is Set For Each Cycle
3. Basket (Tumbler) Spin Time and Dwell (Stop) Time
    a. Fixed in the Automatic "AUTO" Mode and **cannot** be changed.
        1) Spin Time - 2 minutes forward and 2 minutes reverse.
        2) Dwell (Stop) Time - 5-seconds.
    b. Programmable in the Manual Mode.
        1) Spin Time - Programmable from 30-seconds to 120-seconds in 1-second increments.
        2) Dwell (Stop) Time - Programmable from 5-seconds to 10-seconds in 1-second increments.

L. DIAGNOSTICS

The Phase 7 OPL, microprocessor controller (computer) monitors "Drying function," which is the following:

1. Drying Functions: These include temperatures, burners, sail switches, blower, basket (tumbler), and lint drawer.

M. PROGRAM LOCATIONS

This is where system parameters are programmed. These system parameters (programs) are stored in memory. Access to this location is acquired by pressing the "STOP/CLEAR" [O] and the "UP ARROW" together. To exit the Programming Location, simply press the "STOP/CLEAR" [O] key. If you are several menu layers deep, continue to press the "STOP/CLEAR" [O] key to back up the menu until you are **ALL** the way out of the programming mode.

0. SELECT LANGUAGE - This menu allows the selection of five (5) different languages to operate the dryer. The language that is selected will be used for every displayed message as well as faults and menus.

ENGLISH
FRANCAIS
ESPANOL
ITALIANO
DEUTSCH

1. SELECT SYSTEM PARAMETERS - This menu level has four (4) sections. **ALL** programmable parameters other than preprogrammed cycles are done here.

   0. DRYER SETUP - **ALL** parameters that pertain to drying are in this menu level.

      0. SELECT MODEL - This allows the selection of the heat source applied to the dryer as well as if the dryer is reversing or non-reversing.

GAS (reversing)	GAS (non-reversing)
STEAM (reversing)	STEAM (non-reversing)
ELECTRIC (reversing)	ELECTRIC (non-reversing)

      1. SYSTEM TEMP - This selection controls whether the temperature-related programs will be operated in Fahrenheit (ºF) or Celsius (ºC). The programs affected are as follows:

         1) Temperature Display Mode

         2) Drying Temperatures

         3) Cool Down Temperatures

IMPORTANT: The Phase 7 OPL microprocessor controller (computer) automatically calculates and converts the temperatures in these programs to the previously set value. For example, when changing from ºF to ºC, if the preprogrammed Cycle "A" drying temperature was set for 160º F, the Phase 7 OPL microprocessor controller (computer) will change to 71º C (+/- one-degree Celsius).

      2. ENTER LINT COUNT 1 TO 5 - This selection sets the maximum amount of cycles it will run before being locked out (out of service). The operator will be prompted to clean the lint drawer to continue drying.

NOTE: A minimum of 15-seconds is required to have the lint drawer opened in order to return to the "READY" state once it is closed.

3. ENTER AUDIO ALERT ON TIMES 0 TO 10 - This selection allows the operator to adjust the amount of signal tones. This parameter (program) affects the tone at the end of the Cool Down Cycle, as well as, at the end of the Wrinkle Guard On Time.

4. ROTATIONAL SENSOR (Optional) - This selection is used to turn the optional rotational sensor on or off.

1. REVERSING SETUP - The parameters that pertain to the reversing mode are in this menu level.

   0. ENTER SPIN TIME 30 TO 120-SECONDS - This parameter (program) is fixed at 2 minutes in the forward direction and 2 minutes in the reverse direction for the Automatic Mode. In the Manual Mode, it is programmable. This Spin Time is programmed here for the Manually Loaded Manual Cycle only.

   1. ENTER STOP TIME 5 TO 10-SECONDS - This parameter (program) is fixed at 5-seconds in the Automatic Mode and programmable in the Manual Mode. This Dwell (Stop) Time is programmed here for the Manually Loaded Manual Cycle only.

   2. WRINKLE GUARD SETUP - The parameters that pertain to the Wrinkle Guard is in this menu level.

      0. WRINKLE GUARD AUDIO ALERT - This parameter (program) allows the operator to turn the Audio Alert tone on or off at the end of each Wrinkle Guard Cycle. The amount is the same that is selected in "DRYER SETUP" for AUDIO ALERT ON TIMES 0 TO 10.

         AUDIO ALERT ON
         AUDIO ALERT OFF

   3. STEAM INJECTION (Optional) - This parameter is used to inject steam into the basket (tumbler) up to 5 times into the basket (tumbler). 0-5 on time is first entered MM:SS (minutes:seconds) and then the off time is entered MM:SS (minutes:seconds).

2. PROGRAM "A-F" CYCLE - This menu allows the programming of cycle "A-F." The parameters selected in this menu for each letter will be stored in memory for that key. This will allow the operator to utilize one (1) touch drying through keys "A-F."

3. PROGRAM "0-40" CYCLE - This menu allows the programming of cycle "0-40." The parameters selected in this menu for each number will be stored in memory for that number key(s). This will allow the operator to utilize preprogrammed drying cycles stored in memory under a numerical location.

NOTE: BOTH THE "A-F" and "0-40" ALLOWS FOR A TOTAL OF 47 PREPROGRAMMED LOCATIONS FOR CUSTOM DRYING.

4. DEFAULT SETTINGS - This menu allows the operator to set **ALL** the programmable parameters to the default settings. This option has a password selection of 1 2 3. It will then ask to confirm settings. It will default to "NO." Use the arrow keys to select "YES."

CAUTION: Once the settings have been set to their default settings, there is no way to retrieve the old settings. Use caution when using this feature.

5. SENSOR ACTIVATED FIRE EXTINGUISHING (S.A.F.E.) SYSTEM VALVE TEST - This is used to test the S.A.F.E. system to verify valve is operating correctly. Press and hold start button to open valve.

SECTION IV
OPERATING INSTRUCTIONS

The Phase 7 OPL microprocessor controller (computer) allows the operator to choose from six (6) preprogrammed cycles (keys "A-F"). These have been preprogrammed by the factory with the parameters (programs) shown in **Section VII**. There are an additional ("0-40") preprogrammable cycles that are preprogrammed by the factory with the parameters (programs) shown in **Section VII**. For occasional or onetime special loads, the Manually Loaded Cycles can be used where the operator must set the specific program(s) needed.

NOTE: Refer to **Section III** of this manual for a complete explanation of the various cycles/selections available.

After the load is put into the basket (tumbler) and the dryer is ready to dry, determine which cycle will best suit the application (type of load). We recommend using the Automatic Drying Cycle **(Patent No. 4,827,627)** for most loads. This cycle provides for the best drying in the shortest time, **ALL** automatically.

A. OPERATING SEQUENCE

1. Preprogrammed Cycles

   a. Automatic Drying Cycle **(Patent No. 4,827,627)**

      1) Light emitting diode (L.E.D.) display reads "READY" (no cycle in progress).

      2) Press the letter on the keyboard (touch pad) corresponding to the cycle desired (i.e., key "A").

NOTE: "0-40" will require the "START/ENTER" key to be pressed after the number is selected in order to accept the selection and start drying.

      3) The dryer will then start. (I.E., Blower, basket [tumbler], and heat).

      4) L.E.D. display reads AUTO DRYING CYCLE "A," ELAPSED TIME __ MIN 00:00. During the drying cycle, the Phase 7 OPL microprocessor controller (computer) will monitor the amount of moisture in the load. Once the temperature is above 160º F (71º C), the Cycle Status portion of the L.E.D. will change from ELAPSED TIME __ MIN to __ % DRY. The display will count upward until the percentage of extraction programmed is reached.

NOTE: Press and hold the "UP ARROW" to view the basket (tumbler) temperature at any time.

NOTE: The dryer can be stopped at any time by pressing the "STOP/CLEAR" [O] key, at this time the dryer will go into a cycle pause. If the "STOP/CLEAR" [O] key is pressed again at this point, the cycle that was in progress **will be** cancelled and returned to the "READY" state.

5) Once the preprogrammed percentage of extraction (dryness level) is reached, the drying cycle will end and the Cool Down Cycle will begin.

6) Once the Cool Down Cycle begins at the end of the heat cycle, the light emitting diode (L.E.D.) display will read COOL DOWN TEMP ___/___ MINUTES REMAINING. At the end of the heat cycle, the dryer will shut off the heat and continue the fan and basket (tumbler) until the Cool Down Time or temperature is reached.

7) Once the Cool Down Cycle is completed the Phase 7 OPL microprocessor controller (computer) will proceed into the Wrinkle Guard Cycle. The Audio Alert tone will sound (for amount set in Audio Alert On Time). The L.E.D. display will read "WRINKLE GUARD." The times are fixed at 2 minutes OFF, 2 minutes ON for a maximum time of 99 minutes. These times <u>are</u> <u>not</u> programmable. During the ON time, the blower (fan) and the basket (tumbler) will start to rotate (without heat for 2 minutes). The Phase 7 OPL microprocessor controller (computer) will repeat this process until the Maximum Wrinkle Guard On Time has expired (99 minutes). The L.E.D. display will then read "CYCLE DONE" and lockout the dryer functions until the doors are opened. It will then return to "READY."

b. Timed (Manual) Drying Cycle

1) L.E.D. display reads "READY" (no cycle in progress).

2) Press the letter on the keyboard (touch pad) corresponding to the cycle desired (i.e., key "D").

NOTE: "0-40" WILL REQUIRE THE "START/ENTER" [I] KEY TO BE PRESSED AFTER THE NUMBER IS SELECTED IN ORDER TO ACCEPT THE SELECTION and START DRYING.

3) The dryer will then start. (I.E., blower, basket [tumbler], and heat).

4) The L.E.D. display will read MANUAL DRYING CYCLE D, 00:00 MIN REMAIN.

NOTE: Press and hold the "UP ARROW" to view the basket (tumbler) temperature at any time.

NOTE: The dryer can be stopped at any time by pressing the "STOP/CLEAR" [O] key, at this time the dryer will go into a cycle pause. If the "STOP/CLEAR" [O] key is pressed again at this point, the cycle that was in progress **<u>will</u> <u>be</u>** cancelled and returned to the "READY" state.

NOTE: Press and hold the "DOWN ARROW" to view the basket (tumbler) RPM.

5) When the programmed drying time has expired, the Phase 7 OPL microprocessor controller (computer) will proceed into the Cool Down Cycle.

6) Once the Cool Down Cycle begins at the end of the heat cycle, the light emitting diode (L.E.D.) display will read COOL DOWN TEMP ___/___ MINUTES REMAINING. At the end of the heat cycle, the dryer will shut off the heat and continue the fan and basket (tumbler) until the Cool Down Time or temperature is reached.

7) Once the Cool Down Cycle is completed the Phase 7 OPL microprocessor controller (computer) will proceed into the Wrinkle Guard Cycle. The Audio Alert tone will sound (for amount set in Audio Alert On Time). The L.E.D. display will read "WRINKLE GUARD." The times are fixed at 2 minutes OFF, 2 minutes ON for a maximum time of 99 minutes. These times are not programmable. During the ON time, the blower (fan) and the basket (tumbler) will start to rotate (without heat for 2 minutes). The Phase 7 OPL microprocessor controller (computer) will repeat this process until the Maximum Wrinkle Guard On Time has expired (99 minutes). The L.E.D. display will then read "CYCLE DONE" and lockout the dryer functions until the doors are opened. It will then return to "READY."

2. Manually Loaded Cycles

a. Automatic Drying Cycle **(Patent No. 4,827,627)**

1) L.E.D. display reads "READY" (no cycle in progress).

2) Press AUTO key.

3) L.E.D. display will now read ENTER DRY TEMP 160 TO 200. (Defaults to 160° F [71° C]). Enter the temperature desired (from 160º F to 200º F [71º C to 93º C] in one-degree increments). I.E., for 180º F (82º C), press key "1," key "8," key "0," and then press the "START/ENTER" I key to accept the value.

4) L.E.D. display will now read ENTER DRY LEVEL finishing, dry, and extra dry. Enter the amount of extraction (dryness level desired). Finishing has the most moisture content to extra dry, which has little or no moisture content.

5) L.E.D. display will now read "REVERSE MODE" (defaults to ON). The ON/OFF selection can be toggled with the "UP ARROW" and "DOWN ARROW." Once selected, press the "START/ ENTER" I key to accept selection.

NOTE: In addition to entering a value by pressing the number keys, the "UP ARROW" and "DOWN ARROW" can be used to scroll to the number desired or toggle between selections.

6) The dryer will now display "PRESS START." Press the "START/ENTER" I key to start the dryer. The L.E.D. display will read AUTO DRYING CYCLE, ELAPSED TIME __ MIN. During the Drying Cycle, the Phase 7 OPL microprocessor controller (computer) is monitoring the moisture in the load. Once the temperature is above 160º F (71º C), the Cycle Status portion of the L.E.D. will change from ELAPSED TIME __ MIN to DRYNESS LEVEL__. The display will count upward until the percentage of extraction programmed is reached.

NOTE: Press and hold the "UP ARROW" to view the basket (tumbler) temperature at any time.

NOTE: The dryer can be stopped at any time by pressing the "STOP/CLEAR" O key, at this time the dryer will go into a cycle pause. If the "STOP/CLEAR" O key is pressed again at this point, the cycle that was in progress **will be** cancelled and returned to the "READY" state.

NOTE: Press and hold the "DOWN ARROW" to view the basket (tumbler) RPM.

7) Once the preprogrammed percentage of extraction (dryness level) is reached, the drying cycle will end, and the Cool Down Cycle will begin.

8) Once the Cool Down Cycle begins at the end of the heat cycle, the light emitting diode (L.E.D.) display will read COOL DOWN TEMP ___/___MINUTES REMAINING. At the end of the heat cycle, the dryer will shut off the heat and continue the fan and basket (tumbler) until the Cool Down Time or temperature is reached.

9) Once the Cool Down Cycle is completed the Phase 7 OPL microprocessor controller (computer) will proceed into the Wrinkle Guard Cycle. The Audio Alert tone will sound (for amount set in Audio Alert On Time). The L.E.D. display will read "WRINKLE GUARD." The times are fixed at 2 minutes OFF, 2 minutes ON for a maximum time of 99 minutes. These times are not programmable. During the ON time, the blower (fan) and the basket (tumbler) will start to rotate (without heat for 2 minutes). The Phase 7 OPL microprocessor controller (computer) will repeat this process until the Maximum Wrinkle Guard On Time has expired (99 minutes). The L.E.D. display will then read "CYCLE DONE" and lockout the dryer functions until the doors are opened. It will then return to "READY."

NOTE: Mechanical functions of the dryer **are not** allowed during the ON time. The blower (fan) ***must be*** OFF to perform mechanical functions. However the "STOP/CLEAR" [O] key may be pressed at any time to end the Wrinkle Guard Cycle. Mechanical functions of the dryer are allowed during the OFF time.

b. Timed (Manual) Drying Cycle

1) L.E.D. display reads "READY" (no cycle in progress).

2) Press [MAN] key.

3) L.E.D. display will now read "ENTER DRY TIME 0 TO 99 MINUTES" (defaults to 0). I.E., for 40 minutes, press key "4," key "0," and then press the "START/ENTER" [I] key to accept the value.

4) L.E.D. display will now read "ENTER DRY TEMP __ TO __" (defaults to 100° F [38° C]). Enter the temperature desired (from 100º F to 200º F [38º C to 93º C] in one-degree increments). I.E., for 182º F (83º C), press key "1," key "8," key "2," and then press the "START/ENTER" [I] key to accept the value.

5) Light emitting diode (L.E.D.) display will now read "ENTER COOL DOWN TIME 0 TO 99 MINUTES." I.E., for 10 minutes, press key "1," key "0," and then press the "START/ENTER" [I] key to accept the value.

6) L.E.D. display will now read "REVERSE MODE" (defaults to ON). The ON/OFF selection can be toggled with the "UP ARROW" and "DOWN ARROW." Once selected, press the "START/ENTER" [I] key to accept selection.

7) The dryer will now display "PRESS START." Press the "START/ENTER" [I] key to start the dryer. The L.E.D. display will read MANUAL DRYING CYCLE, __MINUTES REMAIN.

NOTE: The dryer can be stopped at any time by pressing the "STOP/CLEAR" ⊙ key, at this time the dryer will go into a cycle pause. If the "STOP/CLEAR" ⊙ key is pressed again at this point, the cycle that was in progress **will be** cancelled and returned to the "READY" state.

8) Once the programmed drying time has expired, the Phase 7 OPL microprocessor controller (computer) will proceed into the Cool Down Cycle (Mode).

9) Once the Cool Down Cycle begins at the end of the heat cycle, the L.E.D. display will read COOL DOWN TEMP ___/___ MINUTES REMAINING. At the end of the heat cycle, the dryer will shut off the heat and continue the fan and basket (tumbler) until the Cool Down Time or temperature is reached.

10) Once the Cool Down Cycle is completed the Phase 7 OPL microprocessor controller (computer) will proceed into the Wrinkle Guard Cycle. The Audio Alert tone will sound (for amount set in Audio Alert On Time). The L.E.D. display will read "WRINKLE GUARD." The times are fixed at 2 minutes OFF, 2 minutes ON for a maximum time of 99 minutes. These times are not programmable. During the ON time, the blower (fan) and the basket (tumbler) will start to rotate (without heat for 2 minutes). The Phase 7 OPL microprocessor controller (computer) will repeat this process until the Maximum Wrinkle Guard On Time has expired (99 minutes). The L.E.D. display will then read "CYCLE DONE" and lockout the dryer functions until the doors are opened. It will then return to "READY."

B. OPERATING NOTES

1. Steam injection will only operate when dryer is running.

2. The RPM of the basket (tumbler) can be displayed by pressing and holding the "DOWN ARROW" key while a cycle is in progress. If cycle has not been started, the display will read CPU Board Voltage Value. (23-26 Volts is normal).

3. The dryer can be stopped at any time by pressing the "STOP/CLEAR" ⊙ key, at this time the dryer will go into a cycle pause. If the "STOP/CLEAR" ⊙ key is pressed again at this point, the cycle that was in progress will be cancelled and returned to the "READY" state.

4. When programming a Manually Loaded Cycle, if an error is made making an entry, press the "STOP/CLEAR" ⊙ key ONCE, and the entry will be cancelled. Reenter the selection. If the selection is entered and an error is made, the "STOP/CLEAR" ⊙ key will cancel the program and return to the "READY" state.

5. Use the "UP ARROW" and "DOWN ARROW" to scroll through menus or increase/decrease number values or toggle between choices.

6. In the programming mode, the number of keys can be used to jump to menu levels without scrolling through them **ALL**. I.E., from 0 select Model in "DRYER SETUP"; you can jump to menu level five (5). Enter lint count under "DRYER SETUP" by pressing the five (5) key followed by "START/ENTER" [I] key to accept value. Light emitting diode (L.E.D.) display will read five (5): ENTER Lint Count 1 to 5.

7. The basket (tumbler) temperature can be displayed by pressing and holding the "UP ARROW" key.

8. The programmed cycle parameter can be viewed by pressing the "START/ENTER" [I] key followed by the "A-F" key. To view "0-40" cycles, press "START/ENTER" [I] key followed by the number desired to view followed by "START/ENTER" [I] key. The viewing can be stopped by pressing the "STOP/CLEAR" [O] key at anytime.

C. REV 2.2 SENSOR ACTIVATED FIRE EXTINGUISHING (S.A.F.E.) SYSTEM THEORY OF OPERATION

Twenty-seconds after the heat turns off, the Phase 7 control monitors the S.A.F.E. system probe located in the top of the basket (tumbler) chamber and records the minimum temperature. If the minimum recorded temperature is no less than 120° F (48° C) and the control detects a 35° rise in temperature, this will be the trip point and the S.A.F.E. system routine will activate.

While a drying cycle is in process and the heat is on, the Phase 7 control monitors the exhaust temperature transducer. If the drying cycle temperature set point is set greater than 160° F (71° C) and the control detects an exhaust temperature rise 25° F greater than set point, this will be the trip point and the S.A.F.E. system routine will activate.

Once the S.A.F.E. system routine is activated, water will be injected into the basket (tumbler) chamber. Anytime water is being injected into the basket (tumbler); the basket (tumbler) drive will turn the load for 1-second every 15-seconds. This process will continue for a minimum of 2 minutes. After 2 minutes has elapsed, the control will check if the temperature remained above trip point, if so water will remain on. The control will continue to check if temperature is above trip point every 30-seconds. If the water has been on for a constant 10 minutes, the water will be turned off regardless of the temperature. If the temperature has dropped below trip point, the control will turn off the water prior to 10 minutes.

If a short or open S.A.F.E. system Probe is detected after the S.A.F.E. system routine has been activated, the water will remain on for a minimum of 10 minutes then turn off regardless.

SECTION V
L.E.D. DISPLAY MESSAGES

The light emitting diode (L.E.D.) display informs the operator of cycle status, program verification, and displays important diagnostic messages and fault information.

A. L.E.D. DISPLAY OPERATING STATUS

1. Cycles in Progress

    a. While the dryer is operating, the L.E.D. display will read which cycle is in progress. I.E., in a Manual Drying Cycle (Mode), the L.E.D. display will read "MANUAL DRYING CYCLE." In the Cool Down Cycle (Mode) the L.E.D. display will read "COOL DOWN TEMP __, __ MINUTES REMAIN."

2. Cycle Status

    a. While a cycle is in progress, the L.E.D. display will show the progress of the cycle that is being processed.

        1) Automatic Drying Cycle

            a) While a cycle is in progress the cycle status will display ELAPSED TIME __ MIN. During the Drying Cycle, the Phase 7 OPL microprocessor controller (computer) is monitoring the moisture in the load. Once the temperature has reached set point temperature and cycled ON/OFF for three (3) times, the cycle status portion of the L.E.D. will change from ELAPSED TIME __ MIN to __% DRY. The display will count upward until the percentage of extraction programmed is reached.

        2) Timed (Manual) Drying Cycle

            a) While a cycle is in progress the cycle status will display __ MINUTES REMAIN.

3. Alternate Display Programs

    a. The basket's (tumbler's) RPM can be displayed by pressing and holding the "DOWN ARROW" key while a cycle is in progress. If a cycle is not in progress, the board voltage is displayed.

    b. The basket (tumbler) temperature can be displayed by pressing and holding the "UP ARROW" key at any time.

SECTION VI
PROGRAMMING INSTRUCTIONS

A. INTRODUCTION TO PROGRAMMING

The various program selections are stored in the Phase 7 OPL microprocessor controller (computer) and are broken down into five (5) categories:

0. Language (ENGLISH, FRANCAIS, ESPANOL, ITALIANO, and DEUTSCH).

1. System Parameters (Dryer Setup, Display Setup, Cool Down Setup, and Wrinkle Guard Setup).

2. Preprogrammed Cycles (Key "A-F").

    a. This feature allows the operator to have six (6) most commonly used cycle selections awaiting the push of a single keyboard (touch pad) entry to start the dryer.

3. Preprogrammed Cycles ("0-40").

    a. This feature allows the operator to have an added forty-one (41) preprogrammed cycle selections. These can be started by selecting the number and pressing the "START/ENTER" [I] key.

4. Default Settings (returns **ALL** the programmable parameters to the default settings).

Both the preprogrammed cycles and the system parameters (programs) have been preprogrammed by the factory with the parameters shown in **Section VII** of this manual. The various program selections for the preprogrammed cycles and system parameters are outlined in **Section III** of this manual.

ALL program changes for the preprogrammed cycles and system parameters (programs) are done through the keyboard (touch pad) selection keys on the front of the control panel.

ENTERING THE PROGRAMMING MODE:

First, make sure that no cycle is in progress and that the light emitting diode (L.E.D.) display reads "READY," then press the "STOP/CLEAR" [O] key and the "UP ARROW" key together. This will put you into the programming mode.

EXITING THE PROGRAMMING MODE:

The "STOP/CLEAR" [O] key will return you to the previous menu level. Continue to press the "STOP/CLEAR" [O] key until you are **ALL** the way out of the Programming Mode.

To alter the programming parameters, the operator will locate the parameter (program) that is to be changed. If the change is a numerical one (1) (i.e., time and/or temperature), the operator will simply enter the numerical value desired. If an error is made, press the "STOP/CLEAR" [O] key ONCE, and the incorrect entry that was made will be cancelled. Once the entry is made, and the parameter (program) set does not need to be changed, press the "START/ENTER" [I] key and the Phase 7 OPL microprocessor controller (computer) will advance to the next program selected.

If the parameter (program) change is a feature change, such as changing the temperature conversion from degree Fahrenheit (ºF) to degree Celsius (ºC) or from "AUTO" (Automatic Drying Cycle - **[Patent No. 4,827,627]**) to "MANUAL" (Timed [Manual] Drying Cycle), the operator will press and hold the "UP ARROW" or "DOWN ARROW" key. This will toggle between choices. Once the entry is made or if the parameter (program) does not need to be changed, press the "START/ ENTER" key and the Phase 7 OPL microprocessor controller (computer) will advance to the next program selection.

When making numerical changes, please keep in mind to stay within the programming limits shown. If an erroneous entry is made, the Phase 7 OPL microprocessor controller (computer) will display "ERROR" and ignore the entry made when the "START/ENTER" key is pressed and will return to the numerical value previously set.

The Phase 7 OPL microprocessor controller (computer) allows the operator to scroll through the various parameters (programs) and select the parameter to be changed. At this point, the operator can go to the next Program Location (system parameter) to be changed. If no other programs (parameters) need to be changed, the user can get out of the program mode by pressing the "STOP/CLEAR" key until it is out of the programming mode. The Phase 7 OPL microprocessor controller (computer) will be returned to the operating mode, and the light emitting diode (L.E.D.) display will read "READY."

PHASE 7 OPL PROGRAMMING LOCATIONS

TO ENTER PROGRAMMING MODE PRESS AND KEYS TOGETHER.

TO EXIT PROGRAMMING MODE PRESS MULTIPLE TIMES UNTIL DISPLAY RETURNS TO "READY."

0: SELECT LANGUAGE
1: SELECT SYSTEM PARAMETERS
  0: DRYER SETUP
    0: SELECT MODEL
    1: SYSTEM TEMP
    2: ENTER LINT COUNT 1 TO 5
    3: ENTER AUDIO ALERT ON TIMES 0 TO 10
    4: ROTATION SENSOR
  1: REVERSING SETUP
    0: ENTER SPIN TIME 30 TO 120 SECONDS
    1: ENTER STOP TIME 5 TO 10 SECONDS
  2: WRINKLE GUARD SETUP
    0: WRINKLE GUARD AUDIO ALERT
  3: STEAM INJECTION SETUP
2: PROGRAM A - F CYCLES
  SELECT A - F KEY
  SELECT CYCLE TYPE
  AUTO
  0: REVERSE MODE
  1: ENTER DRY TEMP 160 (71) TO 200°F (94°C) *
  2: ENTER DRYNESS LEVEL
  3: ENTER CYCLE ADJUSTMENT VALUE 0 TO 99
  4: CONTROLLED COOL DOWN
  5: ENTER COOL DOWN TIME 0 TO 99 MINUTES
  6: ENTER COOL DOWN TEMP 70 (21) TO 100°F (38°C)
  MANUAL
  0: REVERSE MODE
  1: ENTER DRY TIME 0 TO 99 MINUTES
  2: ENTER DRY TEMP 100 (38) TO 200°F (94°C) *
  3: CONTROLLED COOL DOWN
  4: ENTER COOL DOWN TIME 0 TO 99 MINUTES
  5: ENTER COOL DOWN TEMP 70 (21) TO 100°F (38°C)
  6: STEAM INJECTION
3: PROGRAM 0 - 40 CYCLES
  ENTER 0 - 40
  SELECT CYCLE TYPE
  AUTO
  0: REVERSE MODE
  1: ENTER DRY TEMP 160 (71) TO 200°F (94°C) *
  2: ENTER DRYNESS LEVEL
  3: ENTER CYCLE ADJUSTMENT VALUE 0 TO 99
  4: CONTROLLED COOL DOWN
  5: ENTER COOL DOWN TIME 0 TO 99 MINUTES
  6: ENTER COOL DOWN TEMP 70 (21) TO 100°F (38°C)
  MANUAL
  0: REVERSE MODE
  1: ENTER DRY TIME 0 TO 99 MINUTES
  2: ENTER DRY TEMP 100 (38) TO 200°F (94°C) *
  3: CONTROLLED COOL DOWN
  4: ENTER COOL DOWN TIME 0 TO 99 MINUTES
  5: ENTER COOL DOWN TEMP 70 (21) TO 100°F (38°C)
  6: STEAM INJECTION
4: DEFAULT SETTINGS
  ENTER PASSWORD
  (PRESS "1" "2" "3")
    CONFIRM DEFAULTS
5: FIRE SUPPRESSION SYSTEM VALVE TEST

* 160°F (71°C) MAXIMUM TEMP ON AXIAL MODELS

P/N:114521

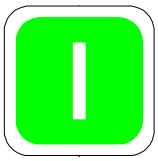
B. PROGRAMMING FLOWCHARTS

The following section of this manual explains the programming of the preprogrammed cycles and Program Locations (system parameters) through the use of flowcharts. A flowchart is nothing more than a diagram of the programming process.

Four (4) different symbols will be used in these flowcharts:

display symbol

key symbol



START/ENTER

STOP/CLEAR

Each display symbol will represent a readout on the Phase 7 OPL microprocessor controller (computer) L.E.D. display, and each key symbol will represent a key that is pressed. For example:

1. If the flowchart shows the symbol

the Phase 7 OPL microprocessor controller (computer) L.E.D. display will read the same.

2. If the flowchart shows the symbol you will press that specific key on the keyboard (touch pad) label.

3. This symbol represents "STOP/CLEAR."

4. This symbol represents "START/ENTER."

   a. The flowchart arrows (i.e., ⟶) represents the program path.

   b. On the sides of these flowcharts are explanations of the flowchart procedure, and in some cases the programming limits.

Listed below, is an index of the flowcharts on the following pages.

Flowchart Titles

	Page
Entering and Exiting Program Mode	23
System Parameters (Program):	
0 LANGUAGES	27
1 SYSTEM PARAMETERS	28
2 "A-F" CYCLE	52
3 "0-40" CYCLE	52
4 DEFAULT SETTINGS	65

NOTE: To review the preset Program Locations, simply press the "START/ENTER" key followed by the letter location while the light emitting diode (L.E.D.) display reads "READY." To review a number location, simply follow the same process as a letter with the addition of the "START/ENTER" key being pressed again after the number is selected.

PHASE 7
MENU PROGRAMMING PROCEDURE

EVERY INDENTED STEP REPRESENTS THE "START/ENTER" KEY BEING PRESSED TO SELECT A MENU ITEM. EVERY MESSAGE WITH A NUMBER BEFORE IT, INDICATES THAT IT IS A MENU SELECTION CHOICE. EVERY MESSAGE WITHOUT A NUMBER BEFORE IT, INDICATES THAT IT IS THE LAST MENU LEVEL.

I.E. MENU FLOW

FROM **("1: SELECT SYSTEM PARAMETERS")**
PRESSING **"START/ENTER"** PUTS YOU AT **(0: DRYER SETUP)**
PRESSING **"UP ARROW"** PUTS YOU AT **(1: COOL DOWN SETUP)**
PRESSING **"DOWN ARROW"** PUTS YOU BACK AT **(0: DRYER SETUP)**

PROGRAMMING MODE:

ENTERING:

MUST BE IN THE "READY" STATE.
PRESS "STOP/CLEAR" and "UP ARROW" KEY TOGETHER.
(THIS WILL GET YOU INTO THE PROGRAMMING MODE.)

EXITING:

PRESSING THE "STOP/CLEAR" KEY REPEATEDLY UNTIL YOU ARE BACK TO THE "READY" DISPLAY. THE "STOP/CLEAR" KEY WILL BRING YOU BACK ONE (1) MENU LEVEL AT A TIME. AT THE FIRST MENU LEVEL, IT WILL EXIT YOU FROM THE PROGRAMMING MODE and RETURN TO THE "READY" STATE.

NOTES:

THE "UP ARROW" and "DOWN ARROW" KEYS ARE USED TO SCROLL UP and DOWN A MENU SELECTION.

THE NUMBER KEYS CAN ALSO BE USED TO BRING YOU DIRECTLY TO A KNOWN MENU ITEM. PRESS THE NUMBER YOU WANT FOLLOWED BY THE "START/ENTER" KEY TO BRING YOU RIGHT TO THE MENU CHOICE ASSIGNED TO THE NUMBER SELECTED.

0: SELECT LANGUAGE
ENGLISH
FRANCAIS
ESPANOL
ITALIANO
DEUTSCH

1: SELECT SYSTEM PARAMETERS

0: DRYER SETUP

0: SELECT MODEL
GAS (Reversing)
ELECTRIC (Reversing)
STEAM (Reversing)

GAS (Non-Reversing)
ELECTRIC (Non-Reversing)
STEAM (Non-Reversing)

1: SYSTEM TEMP
DEG F
DEG C
2: ENTER LINT COUNT 1 TO 5
5 (5 = DEFAULT VALUE)
3: ENTER AUDIO ALERT ON TIMES 0 TO 10
5 (5 = DEFAULT VALUE)
4: ENTER ROTATION SENSOR ON/OFF (ON = DEFAULT VALUE)

1: REVERSING SETUP

0: ENTER SPIN TIME 30 TO 120-SECONDS
60 SEC (60 = DEFAULT VALUE)
1: ENTER STOP TIME 5 TO 10-SECONDS
5 SEC (5 = DEFAULT VALUE)

2: WRINKLE GUARD SETUP

0: WRINKLE GUARD AUDIO ALERT
AUDIO ALERT ON
AUDIO ALERT OFF

3: STEAM INJECTION SETUP

0: ENTER ON TIME
10:00 = DEFAULT
1: ENTER OFF TIME
(1-SECOND ABOVE ON TIME - DEFAULT)

2: PROGRAM “A-F” CYCLE

SELECT “A-F” KEY
* (“*” DISPLAY THE LETTER CHOSEN. DEFAULTS TO “A”)
SELECT CYCLE TYPE
* (“*” DISPLAY THE CYCLE TYPE “AUTO” or “MANUAL”)

AUTO

0: REVERSE MODE
ON
OFF
1: ENTER DRY TEMP 160º TO 200º F (71º C TO 93º C)
*** F (“***” = THE DEFAULT DRY TEMP FOR THAT CYCLE)
2: ENTER DRYNESS LEVEL FINISH, DRY, EXTRA DRY
*** % (“***” = THE DEFAULT DRY LEVEL FOR THAT CYCLE)
3: ENTER CYCLE ADJUSTMENT LEVEL 0 TO 99
(75 = DEFAULT)
4: ENTER CONTROLLED COOL DOWN
(OFF = DEFAULT VALUE)
5: ENTER COOL DOWN TIME 0 TO 90 MINUTES
(4 = DEFAULT VALUE)
6: ENTER COOL DOWN TEMPERATURE 70º TO 100º F (21º TO 38º C)
(80 = DEFAULT VALUE)

MANUAL

0: REVERSE MODE
ON
OFF
1: ENTER SPIN TIME 30 TO 120-SECONDS
*** SEC (60 = THE DEFAULT TIME FOR THAT CYCLE)
ENTER STOP TIME 5 TO 10-SECONDS
*** SEC (5 = THE DEFAULT TIME FOR THAT CYCLE)
2: ENTER DRY TEMP 100º TO 200º F (38º C TO 93º C)
*** F (“***” = THE DEFAULT DRY TEMP FOR THAT CYCLE)
ENTER CONTROLLED COOL DOWN ON/OR OFF
(OFF = DEFAULT)
3: ENTER DRY TIME 0 TO 99 MINUTES
** MIN (0 = THE DEFAULT MINUTES FOR THAT CYCLE)
4: ENTER COOL DOWN TIME 0 TO 99 MINUTES
** MIN (4 = THE DEFAULT TIME FOR THAT CYCLE)
5: ENTER COOL DOWN TEMP 70º TO 100º F (21º TO 38º C)
*** F (100 = THE DEFAULT TEMP FOR THAT CYCLE)
6: ENTER STEAM INJECTION ON/OR OFF
(OFF = DEFAULT VALUE)

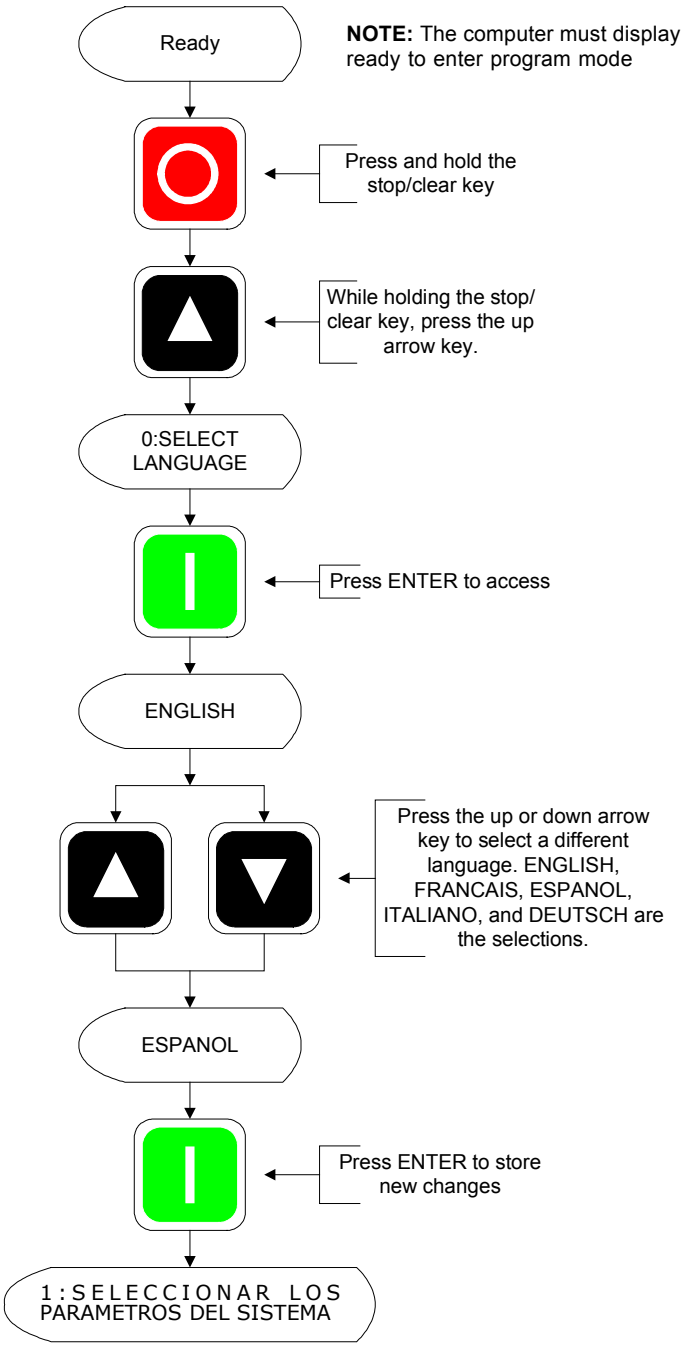
3: PROGRAM “0-40” CYCLE

1: SEE 2: PROGRAMMING A-F CYCLES

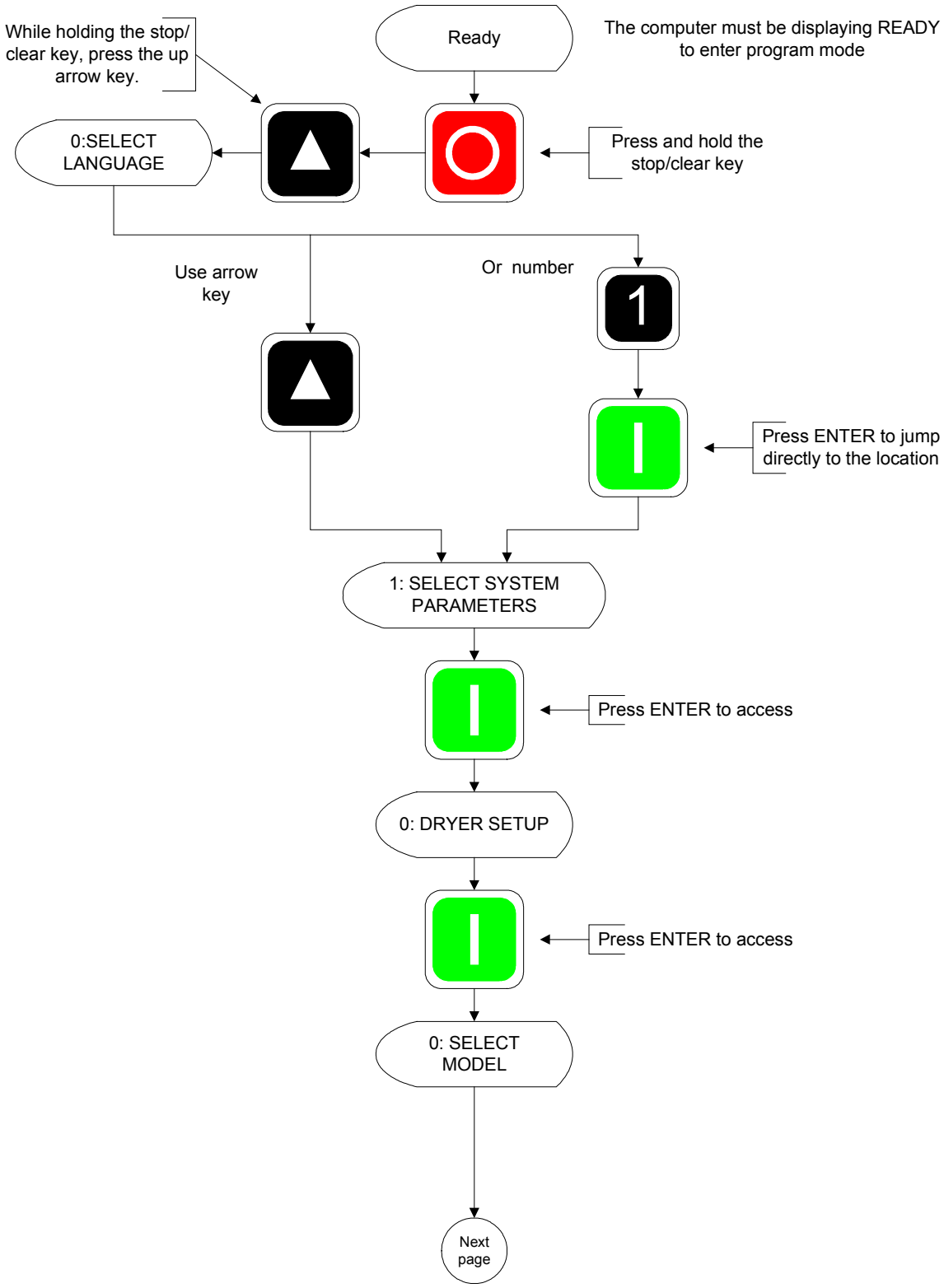
4: DEFAULT SETTINGS

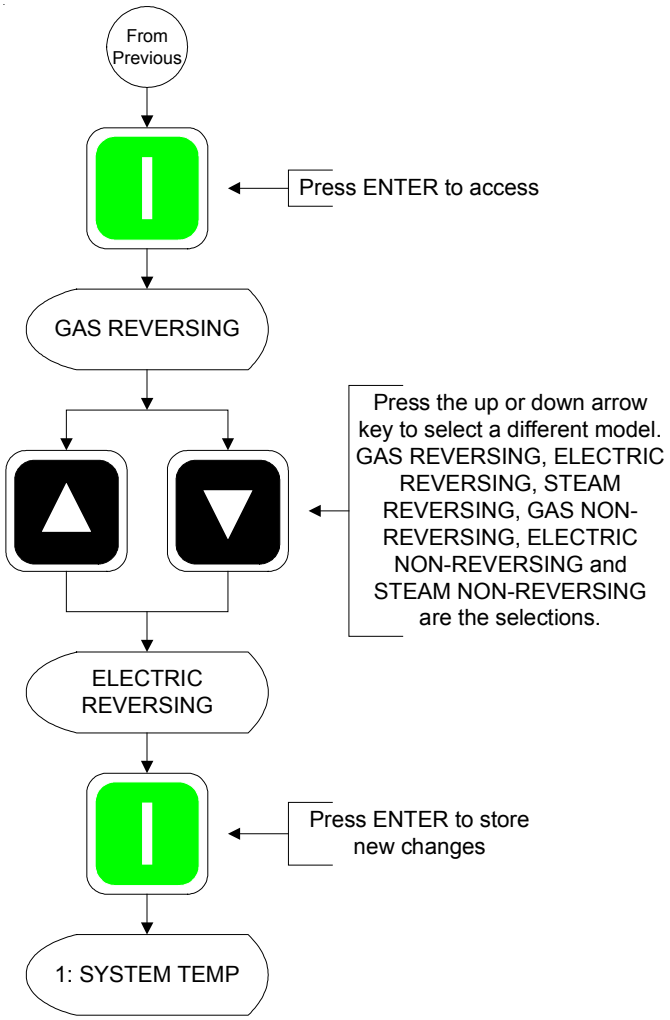
ENTER PASSWORD
(PRESS “1” “2” “3”)
CONFIRM DEFAULTS
NO (DEFAULT VALUE)
YES

Selecting Languages

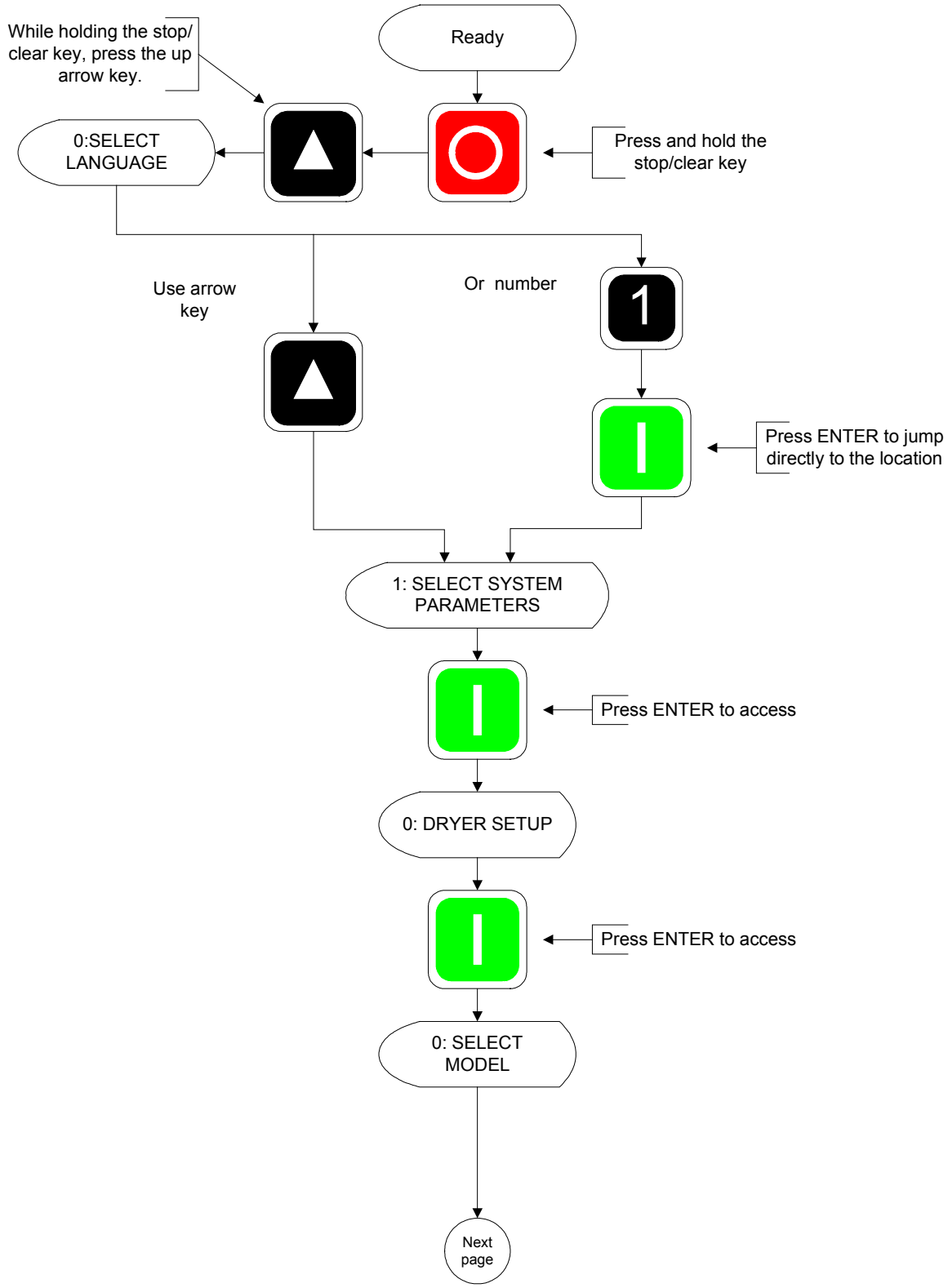

Ready
NOTE: The computer must display ready to enter program mode
Press and hold the stop/clear key
While holding the stop/ clear key, press the up arrow key.
0:SELECT LANGUAGE
Press ENTER to access
ENGLISH
Press the up or down arrow key to select a different language. ENGLISH, FRANCAIS, ESPANOL, ITALIANO, and DEUTSCH are the selections.
ESPANOL
Press ENTER to store new changes
1:SELECCIONAR LOS PARAMETROS DEL SISTEMA

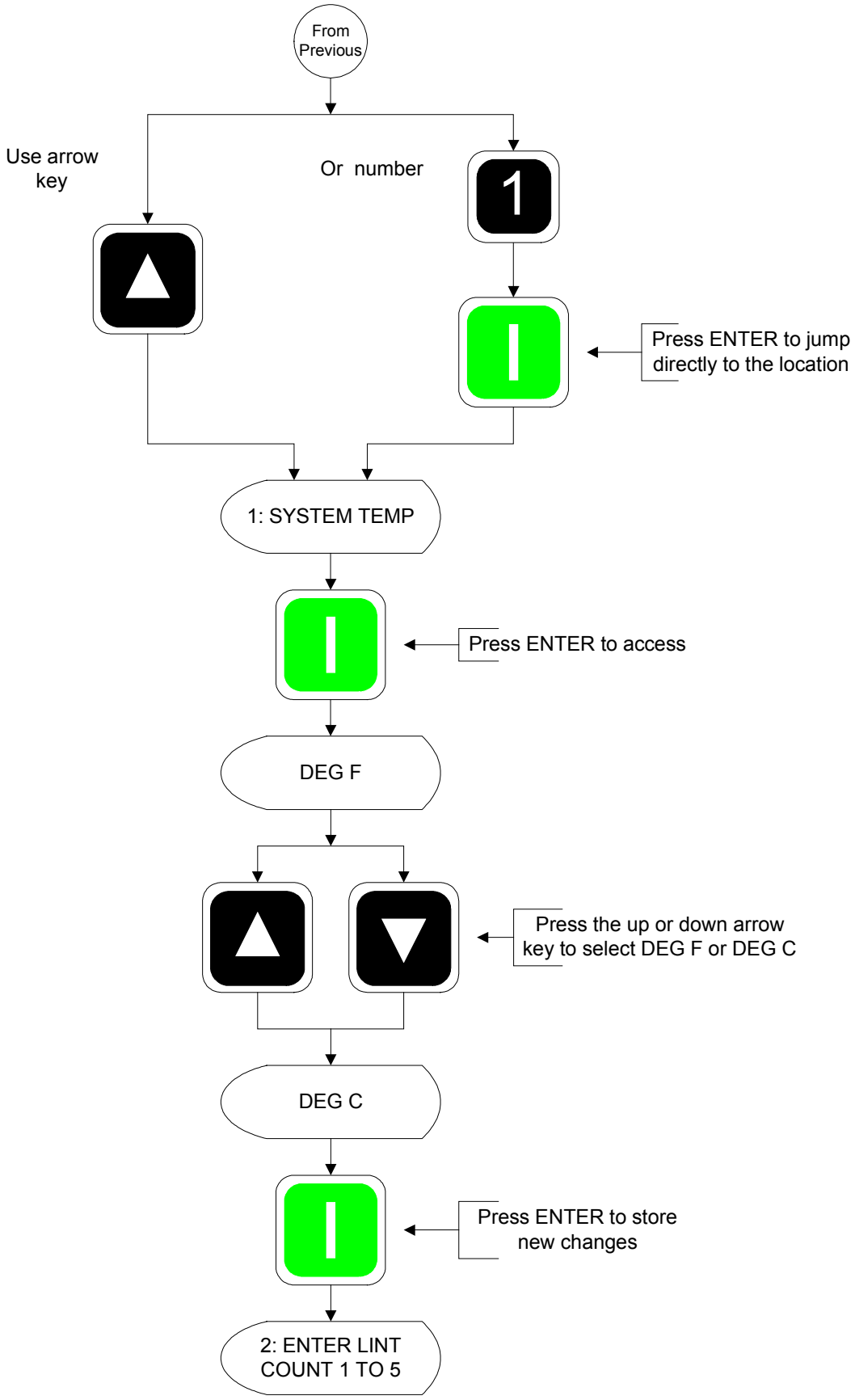
Selecting a Dryer Model


While holding the stop/ clear key, press the up arrow key.
Ready
The computer must be displaying READY to enter program mode
0:SELECT LANGUAGE
Press and hold the stop/clear key
Use arrow key
Or number
1
Press ENTER to jump directly to the location
1: SELECT SYSTEM PARAMETERS
Press ENTER to access
0: DRYER SETUP
Press ENTER to access
0: SELECT MODEL
Next page

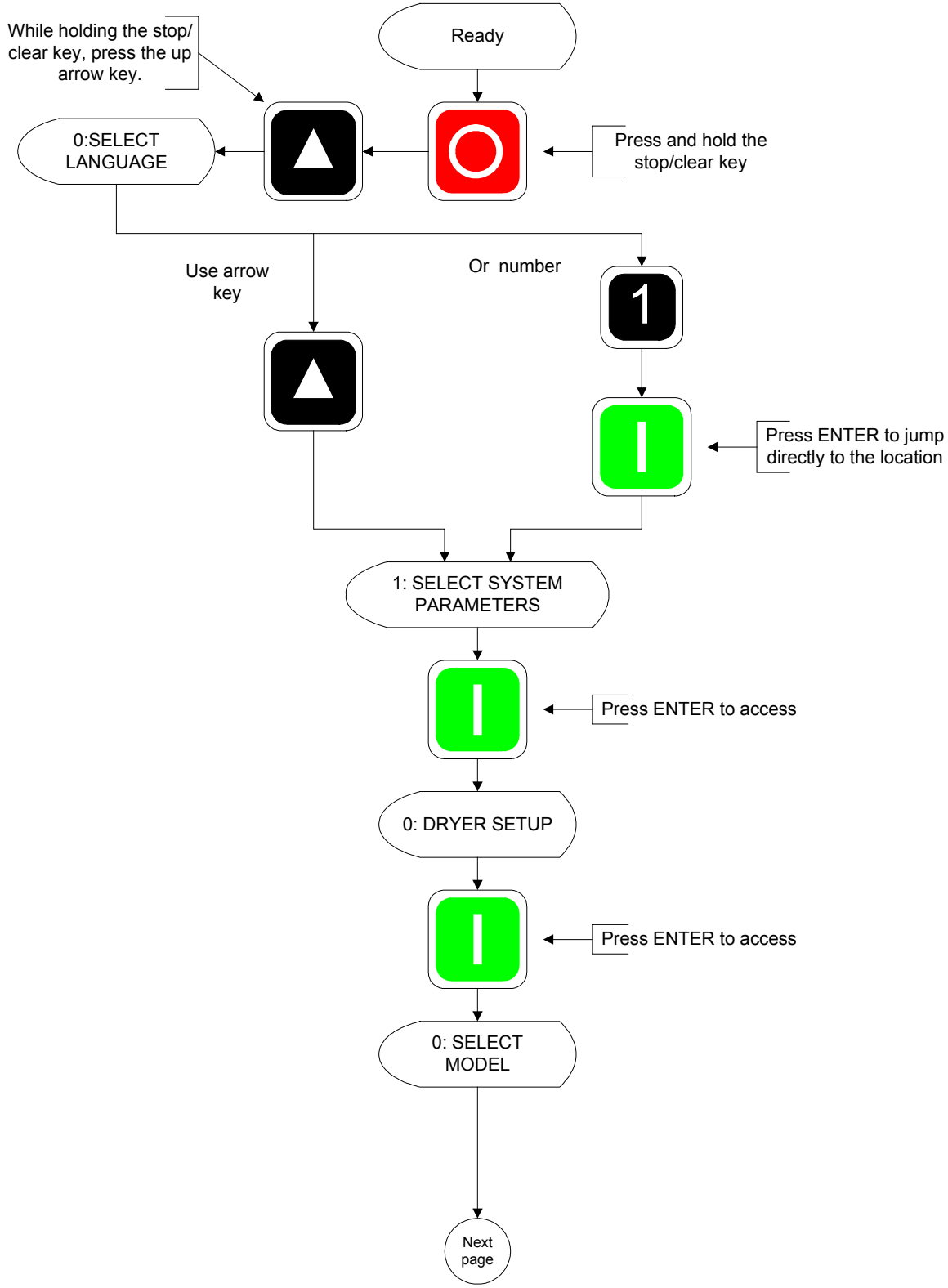

From Previous
Press ENTER to access
GAS REVERSING
Press the up or down arrow key to select a different model. GAS REVERSING, ELECTRIC REVERSING, STEAM REVERSING, GAS NON-REVERSING, ELECTRIC NON-REVERSING and STEAM NON-REVERSING are the selections.
ELECTRIC REVERSING
Press ENTER to store new changes
1: SYSTEM TEMP

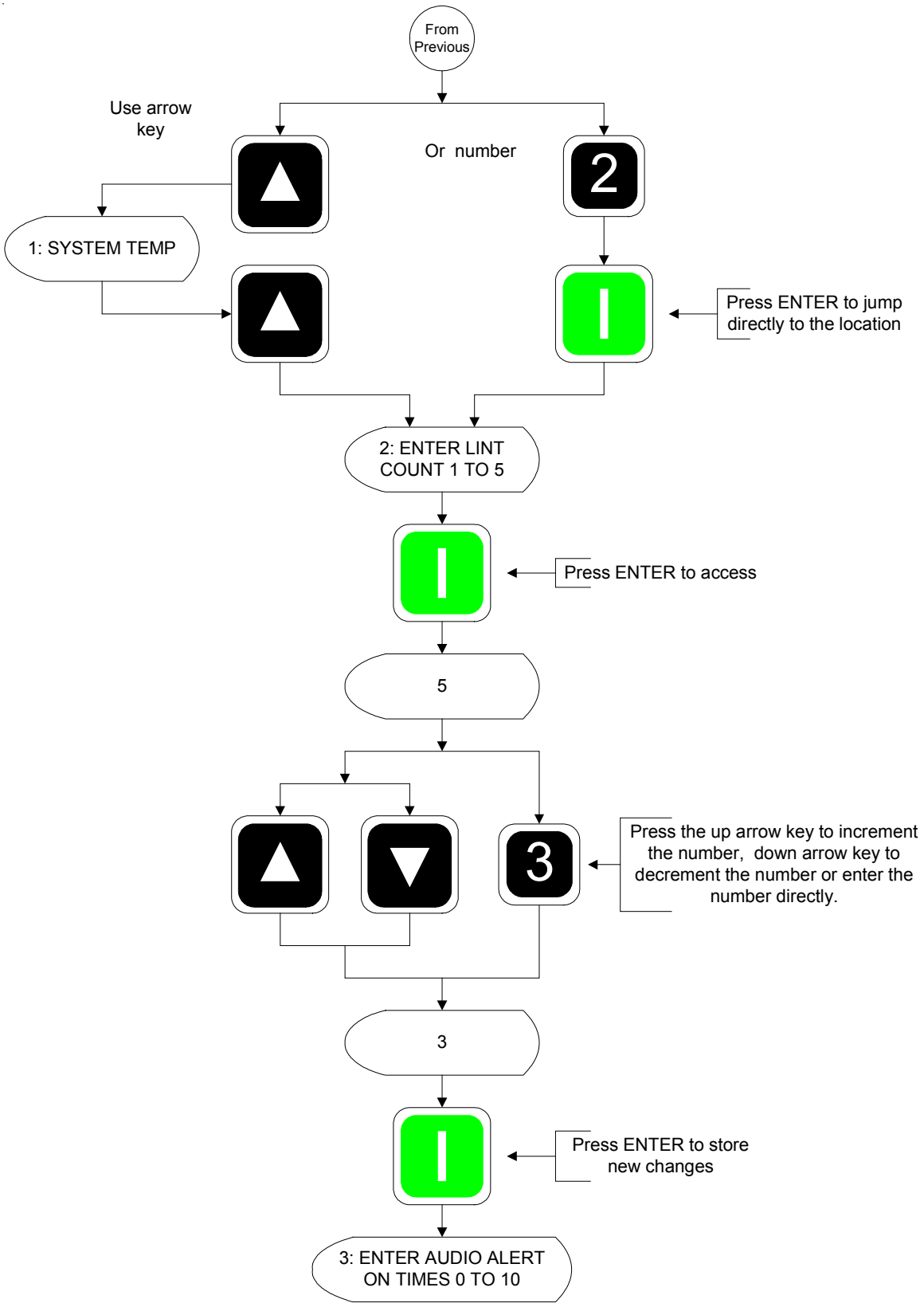
Selecting the System Temperature



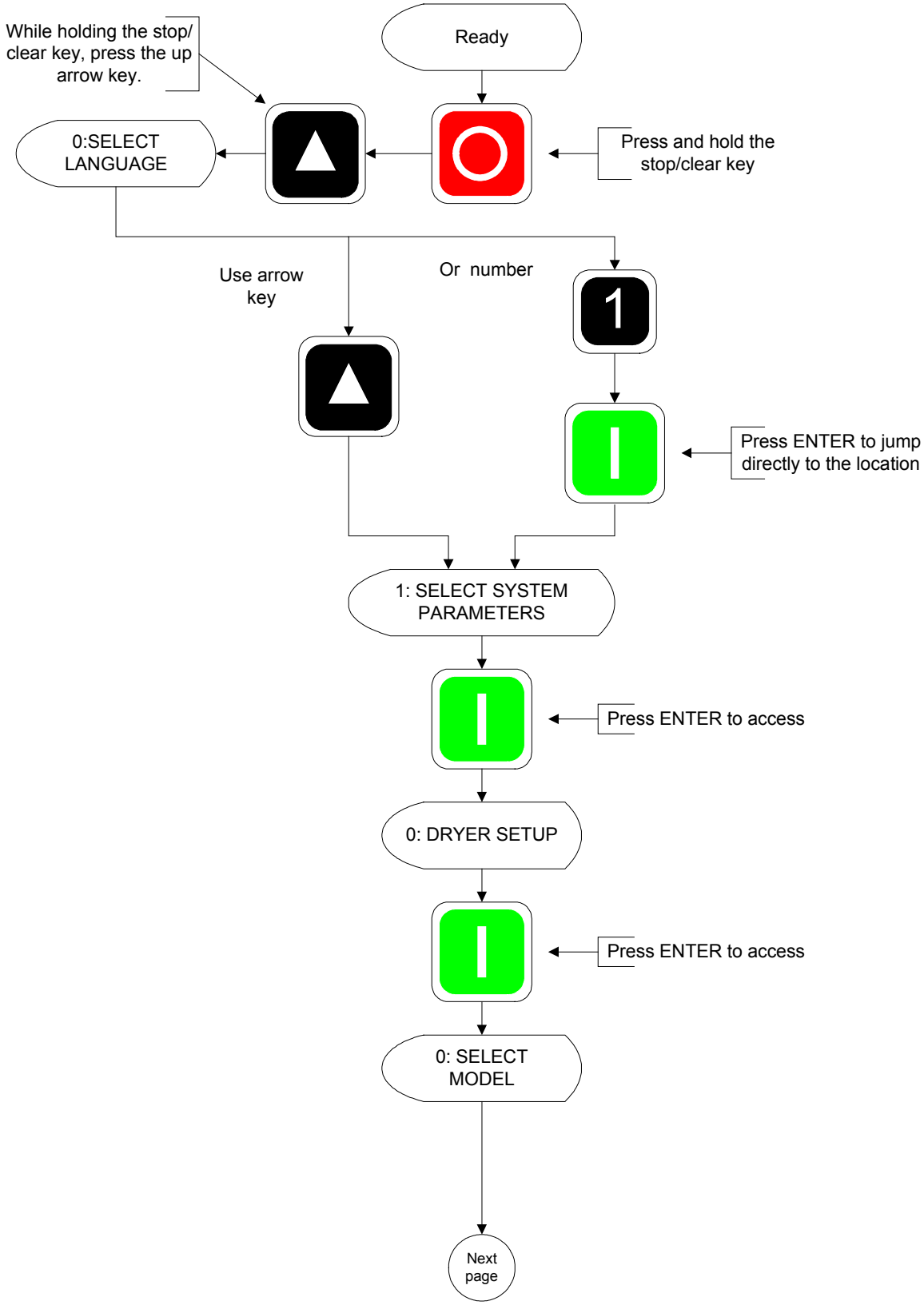

From Previous
Use arrow key
Or number
1
Press ENTER to jump directly to the location
1: SYSTEM TEMP
Press ENTER to access
DEG F
Press the up or down arrow key to select DEG F or DEG C
DEG C
Press ENTER to store new changes
2: ENTER LINT COUNT 1 TO 5

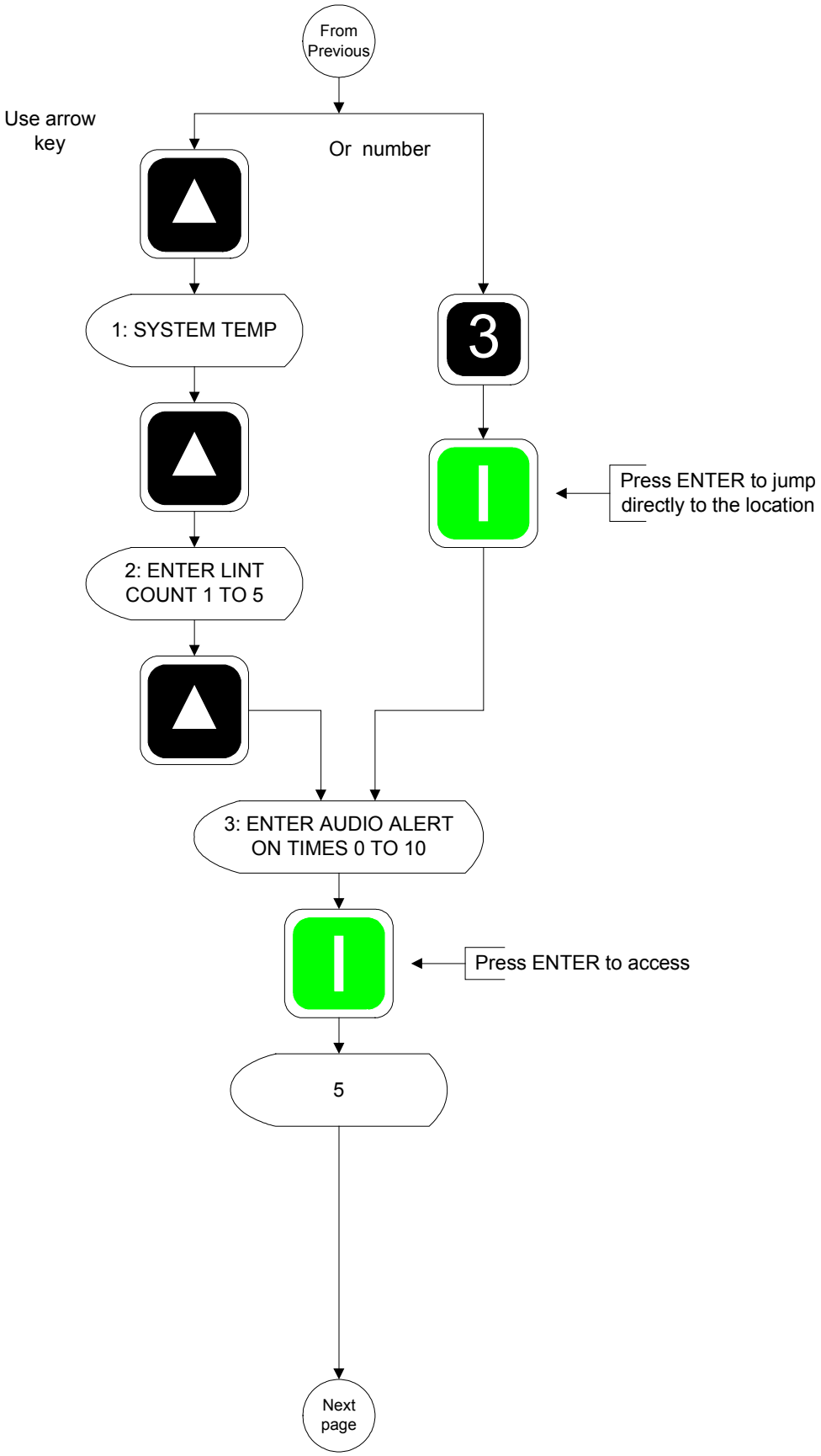
Setting the Lint Count

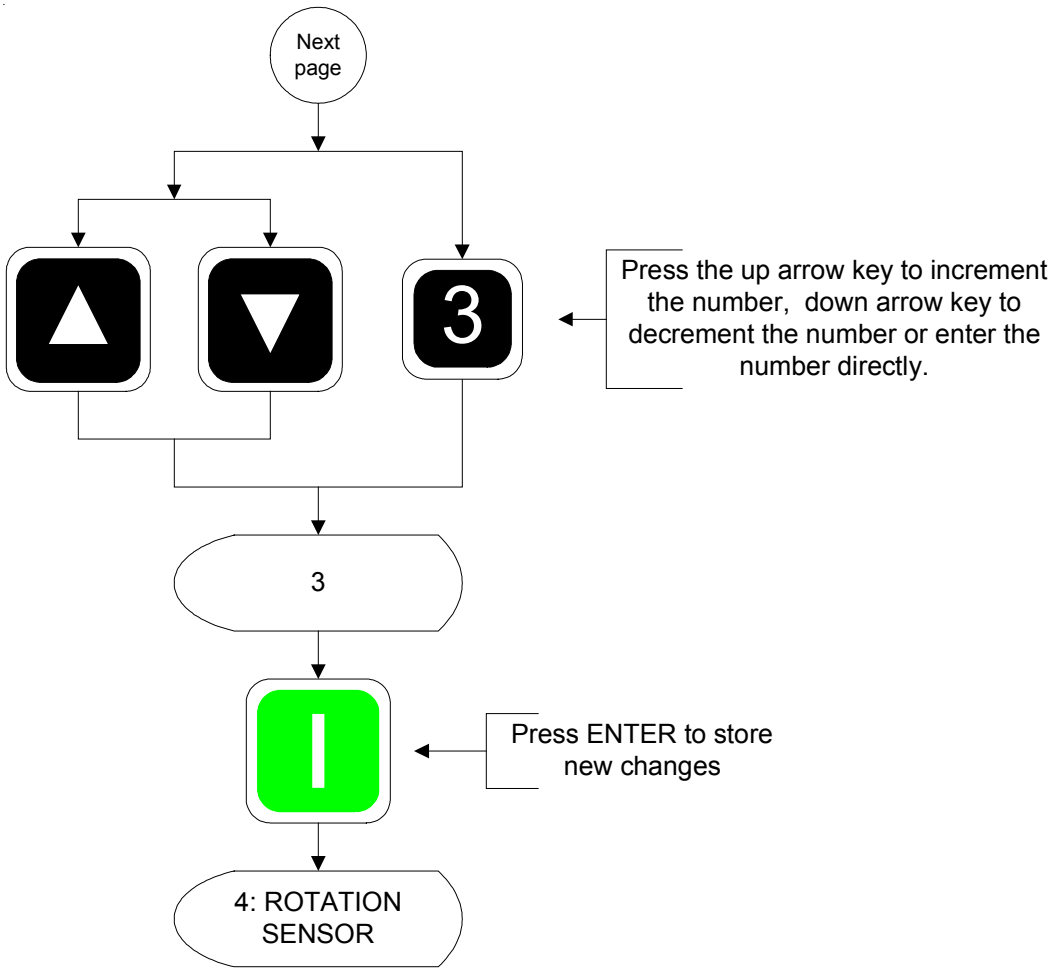



From Previous
Use arrow key
Or number
2
1: SYSTEM TEMP
Press ENTER to jump directly to the location
2: ENTER LINT COUNT 1 TO 5
Press ENTER to access
5
3
Press the up arrow key to increment the number, down arrow key to decrement the number or enter the number directly.
3
Press ENTER to store new changes
3: ENTER AUDIO ALERT ON TIMES 0 TO 10

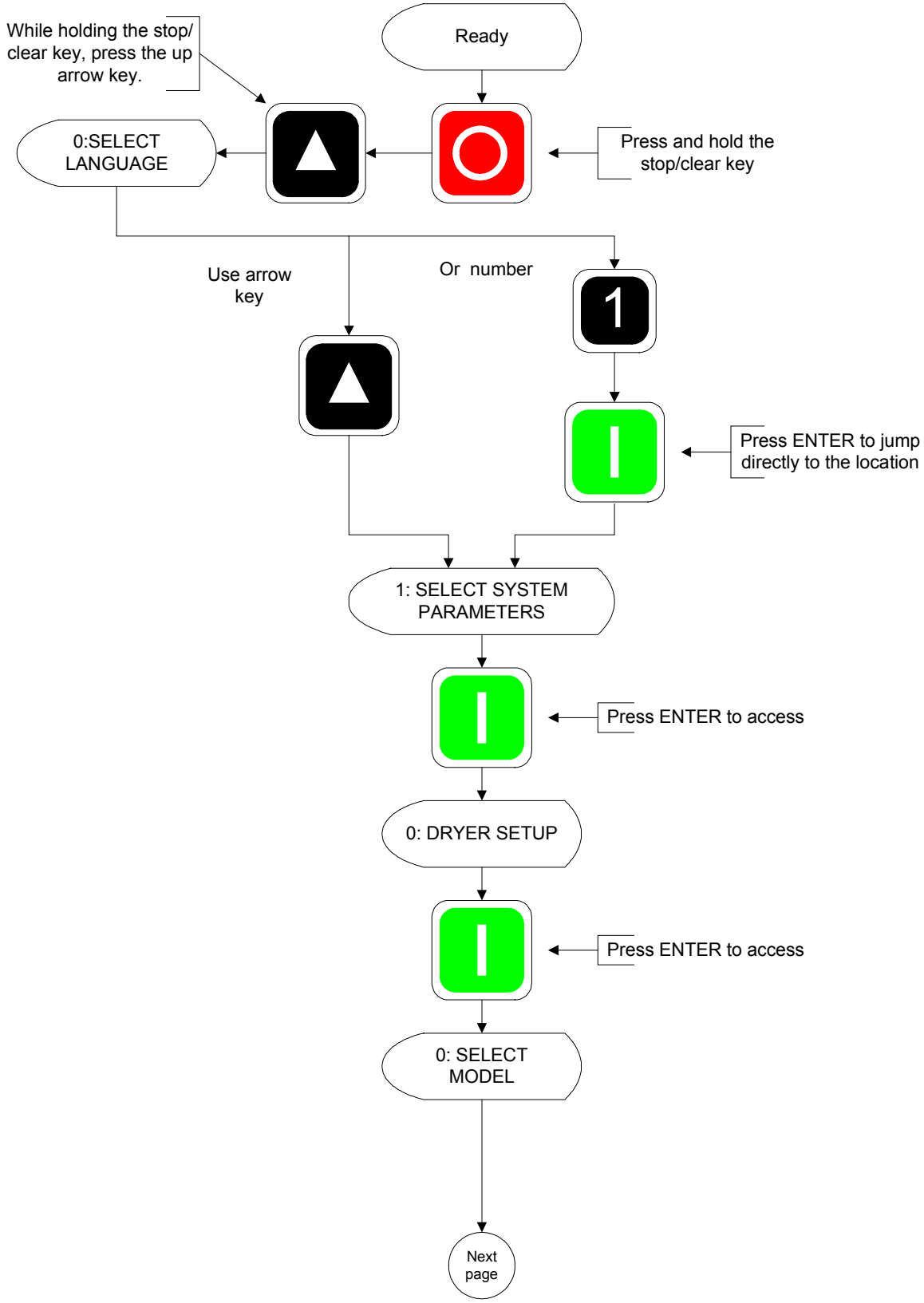
Adjusting the Audio Alert On times

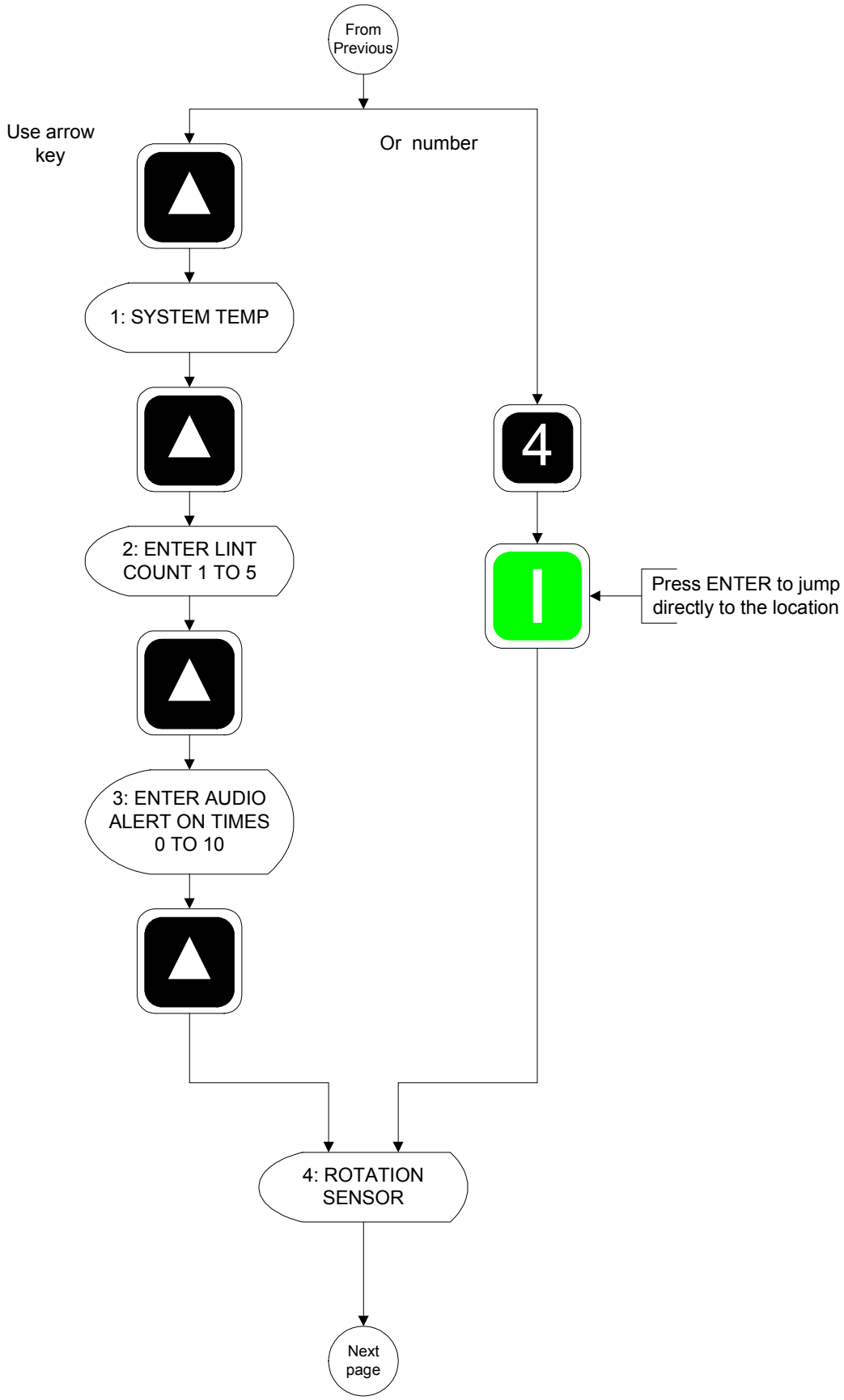


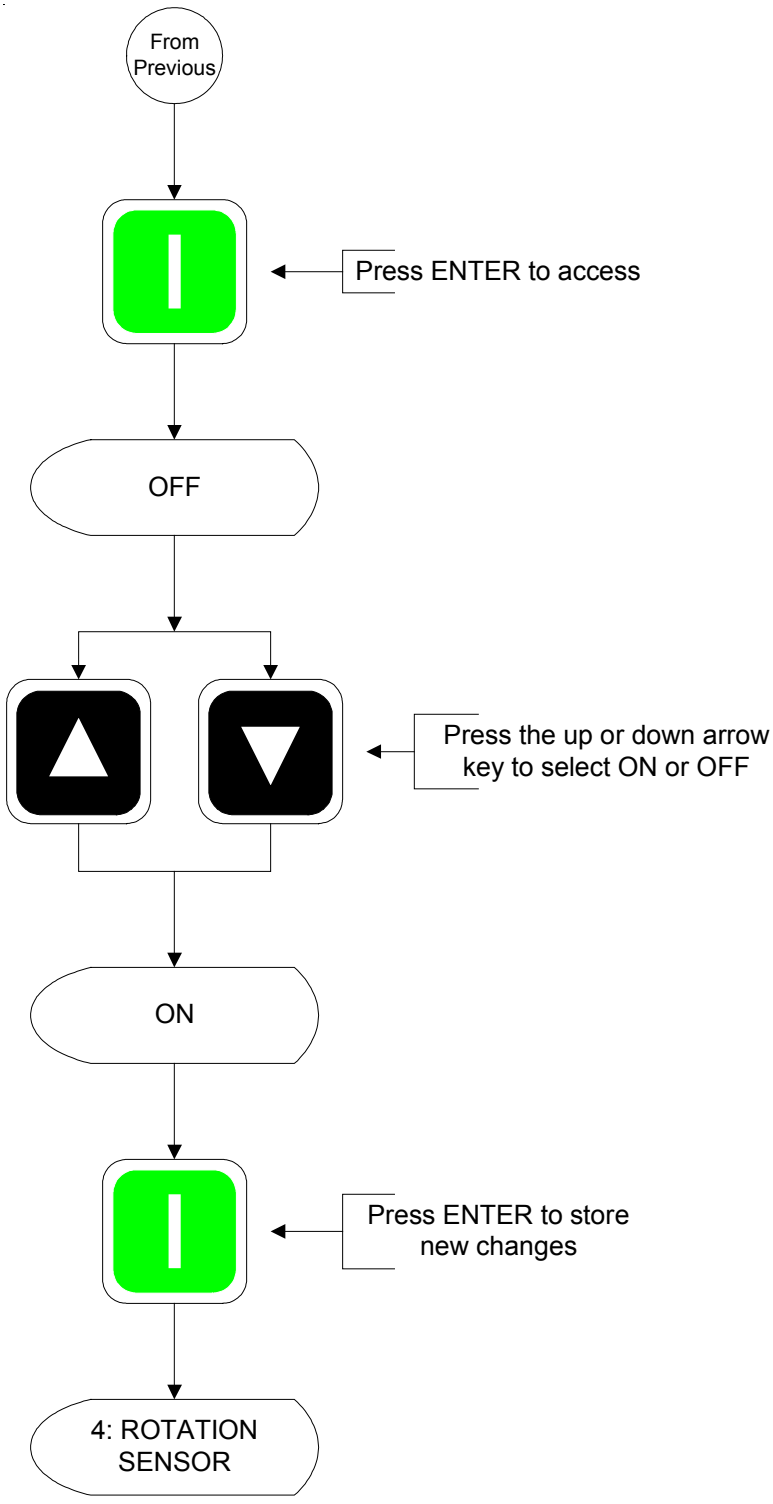

From Previous
Use arrow key
Or number
1: SYSTEM TEMP
3
Press ENTER to jump directly to the location
2: ENTER LINT COUNT 1 TO 5
3: ENTER AUDIO ALERT ON TIMES 0 TO 10
Press ENTER to access
5
Next page


Next page
3
Press the up arrow key to increment the number, down arrow key to decrement the number or enter the number directly.
3
Press ENTER to store new changes
4: ROTATION SENSOR

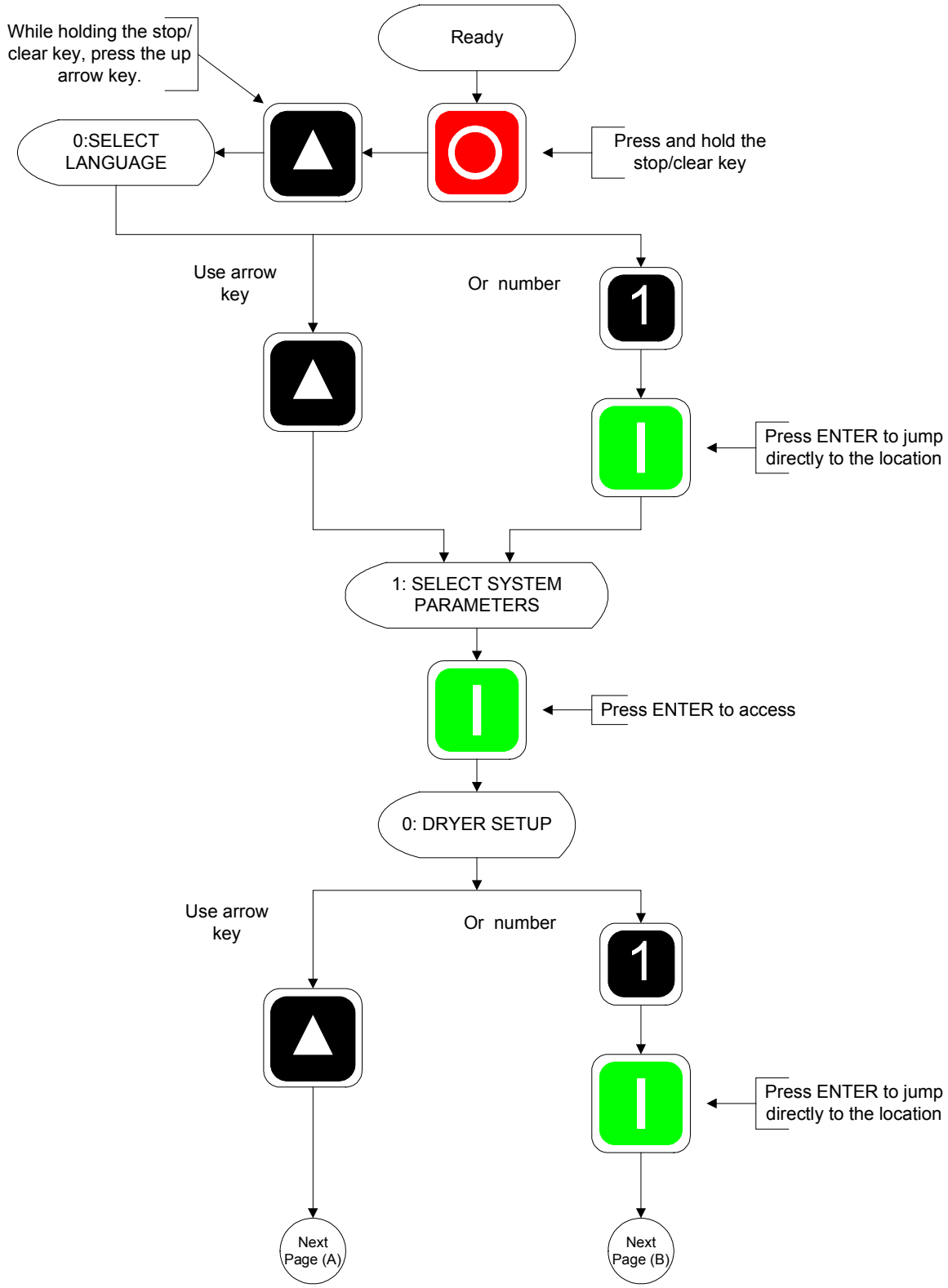
Rotation Sensor

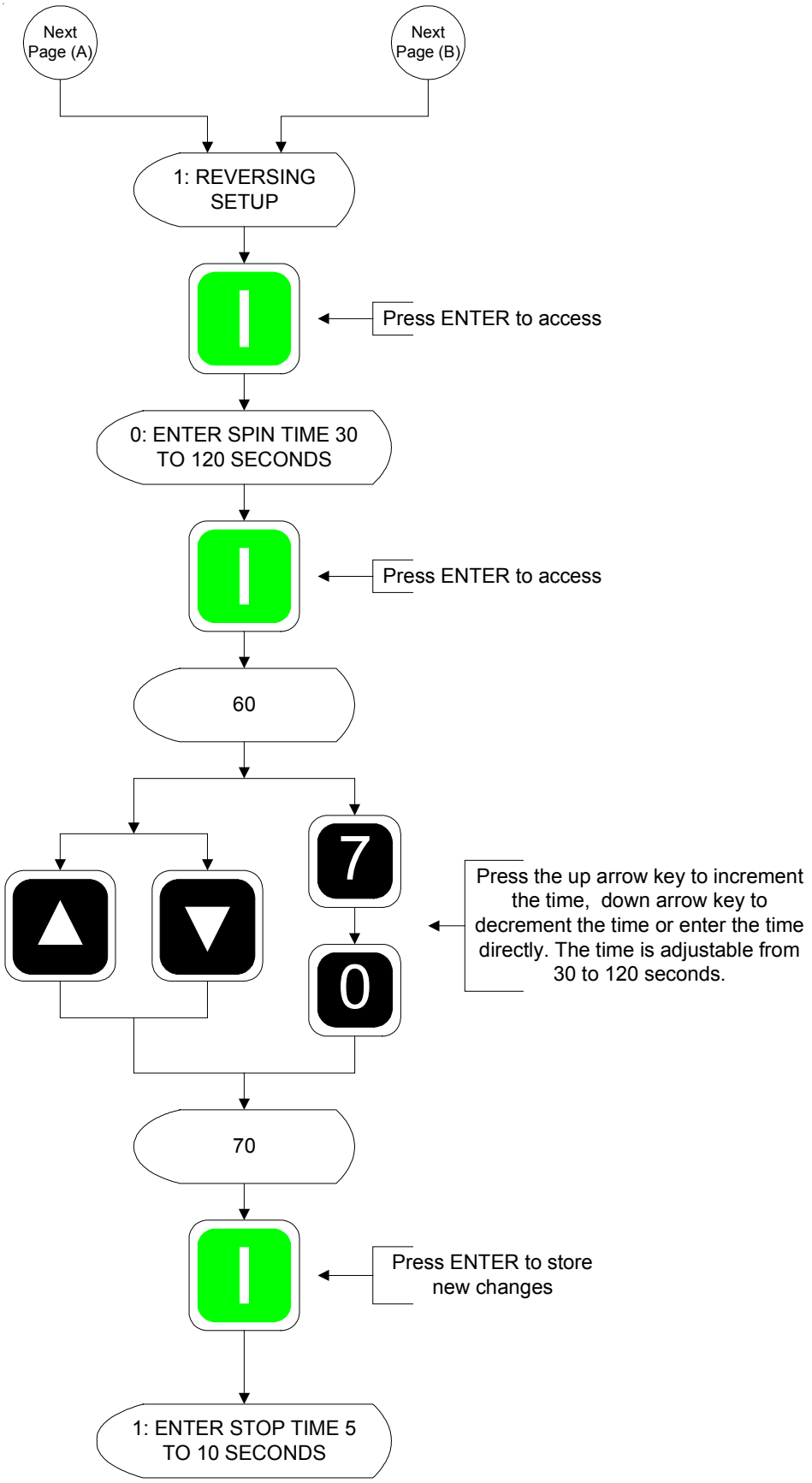


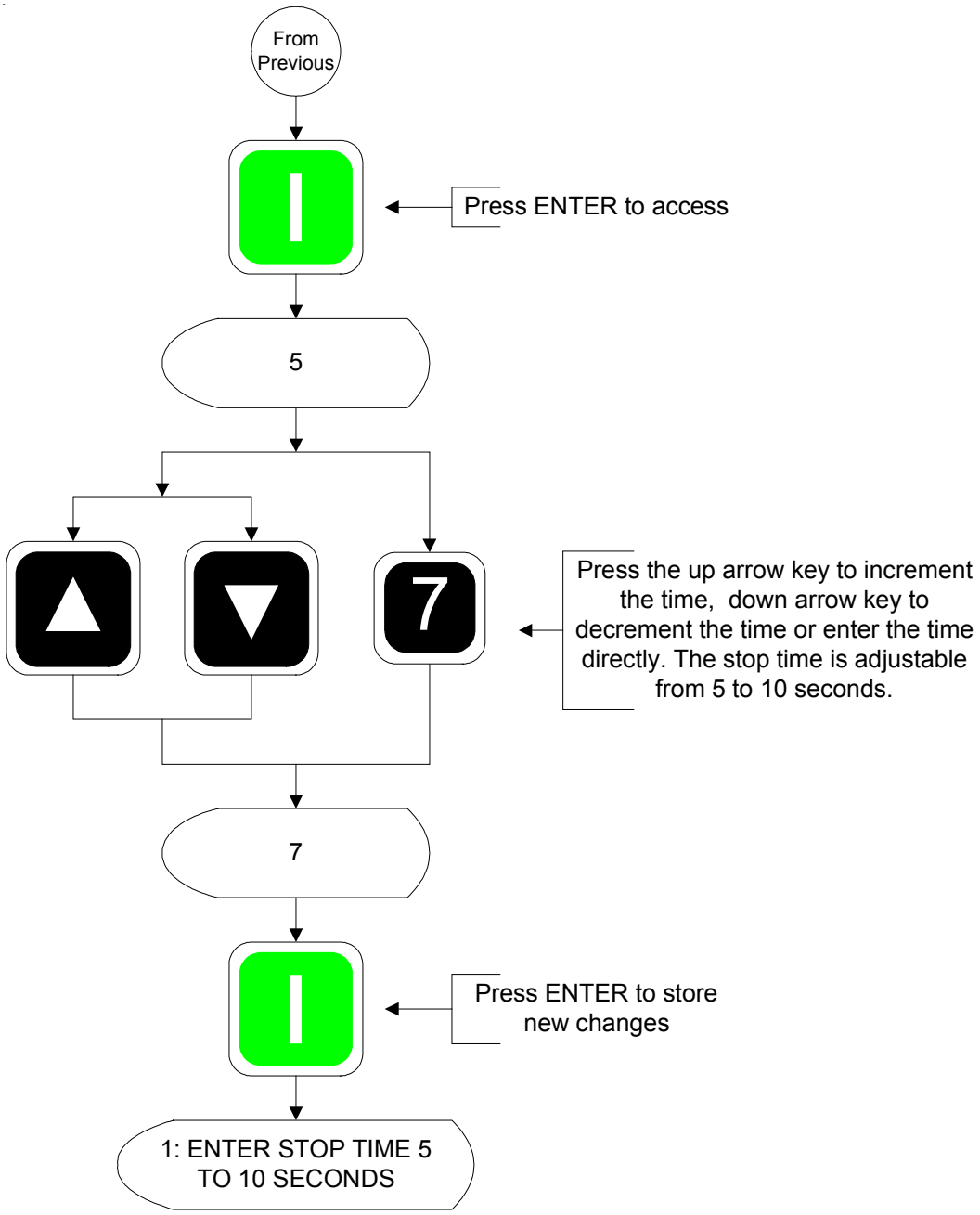

From Previous
Use arrow key
Or number
1: SYSTEM TEMP
2: ENTER LINT COUNT 1 TO 5
3: ENTER AUDIO ALERT ON TIMES 0 TO 10
4
1
Press ENTER to jump directly to the location
4: ROTATION SENSOR
Next page


From Previous
Press ENTER to access
OFF
Press the up or down arrow key to select ON or OFF
ON
Press ENTER to store new changes
4: ROTATION SENSOR

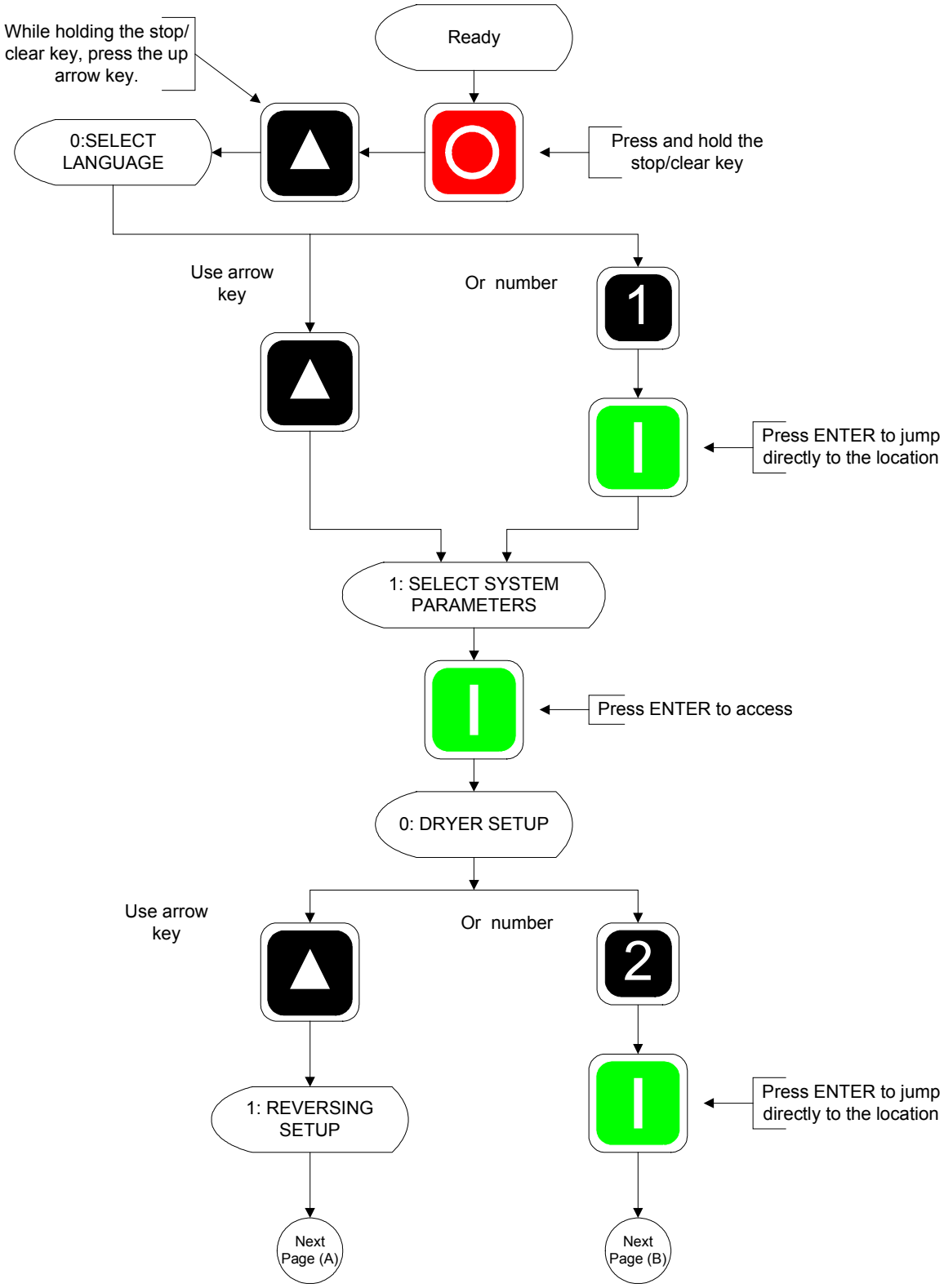
Adjusting Reversing Spin Time and Stop Time

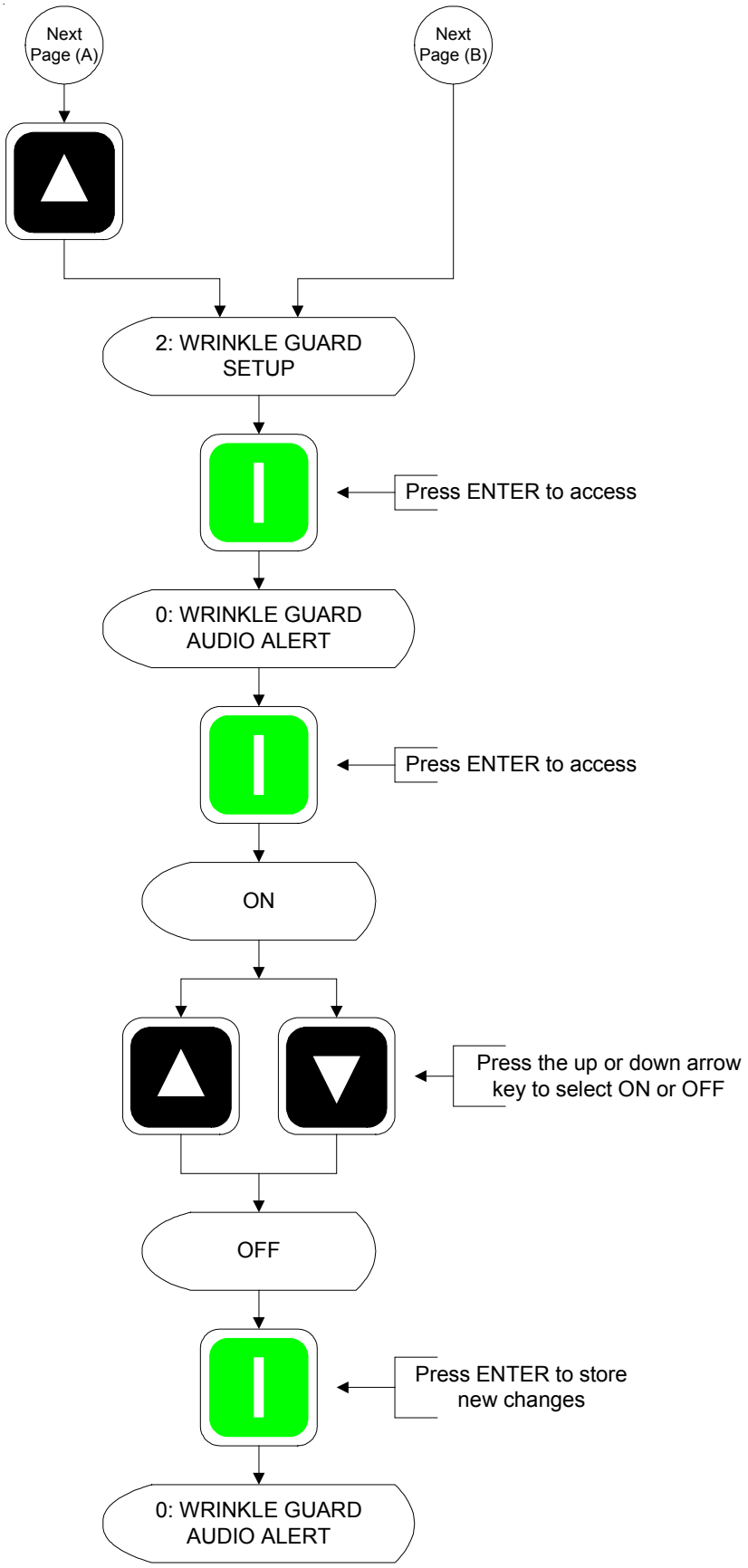



Next Page (A)
Next Page (B)
1: REVERSING SETUP
Press ENTER to access
0: ENTER SPIN TIME 30 TO 120 SECONDS
Press ENTER to access
60
7
0
Press the up arrow key to increment the time, down arrow key to decrement the time or enter the time directly. The time is adjustable from 30 to 120 seconds.
70
Press ENTER to store new changes
1: ENTER STOP TIME 5 TO 10 SECONDS

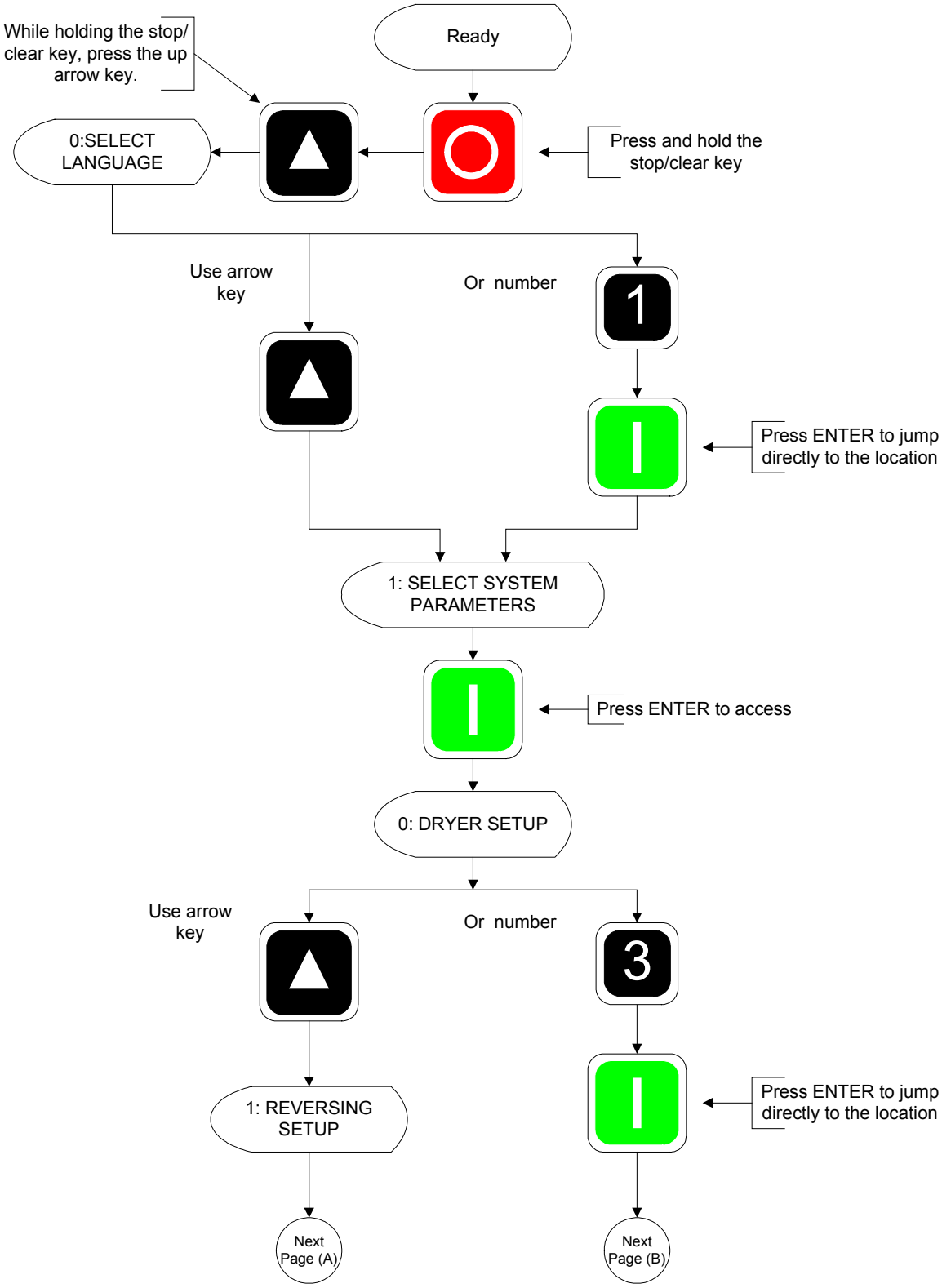

From Previous
Press ENTER to access
5
7
Press the up arrow key to increment the time, down arrow key to decrement the time or enter the time directly. The stop time is adjustable from 5 to 10 seconds.
7
Press ENTER to store new changes
1: ENTER STOP TIME 5 TO 10 SECONDS

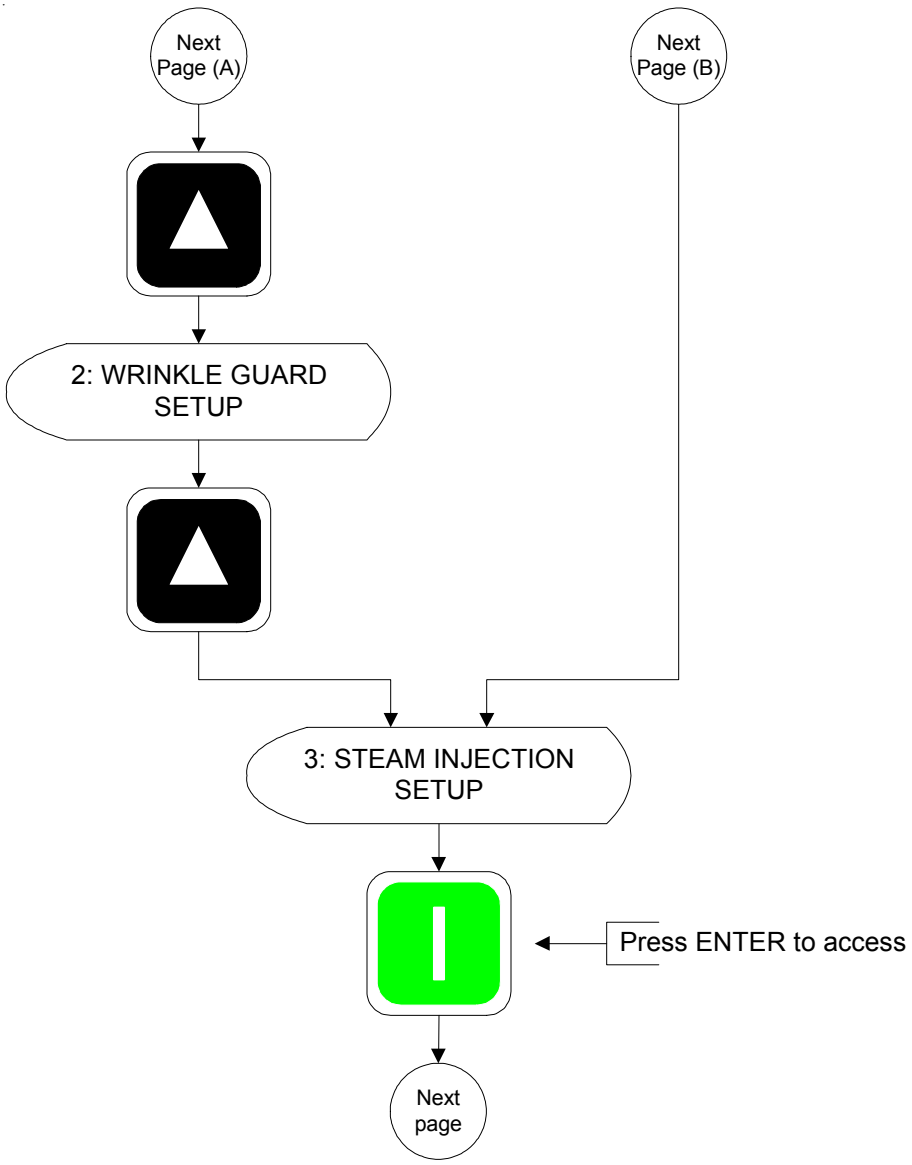
Wrinkle Guard Audio Alert

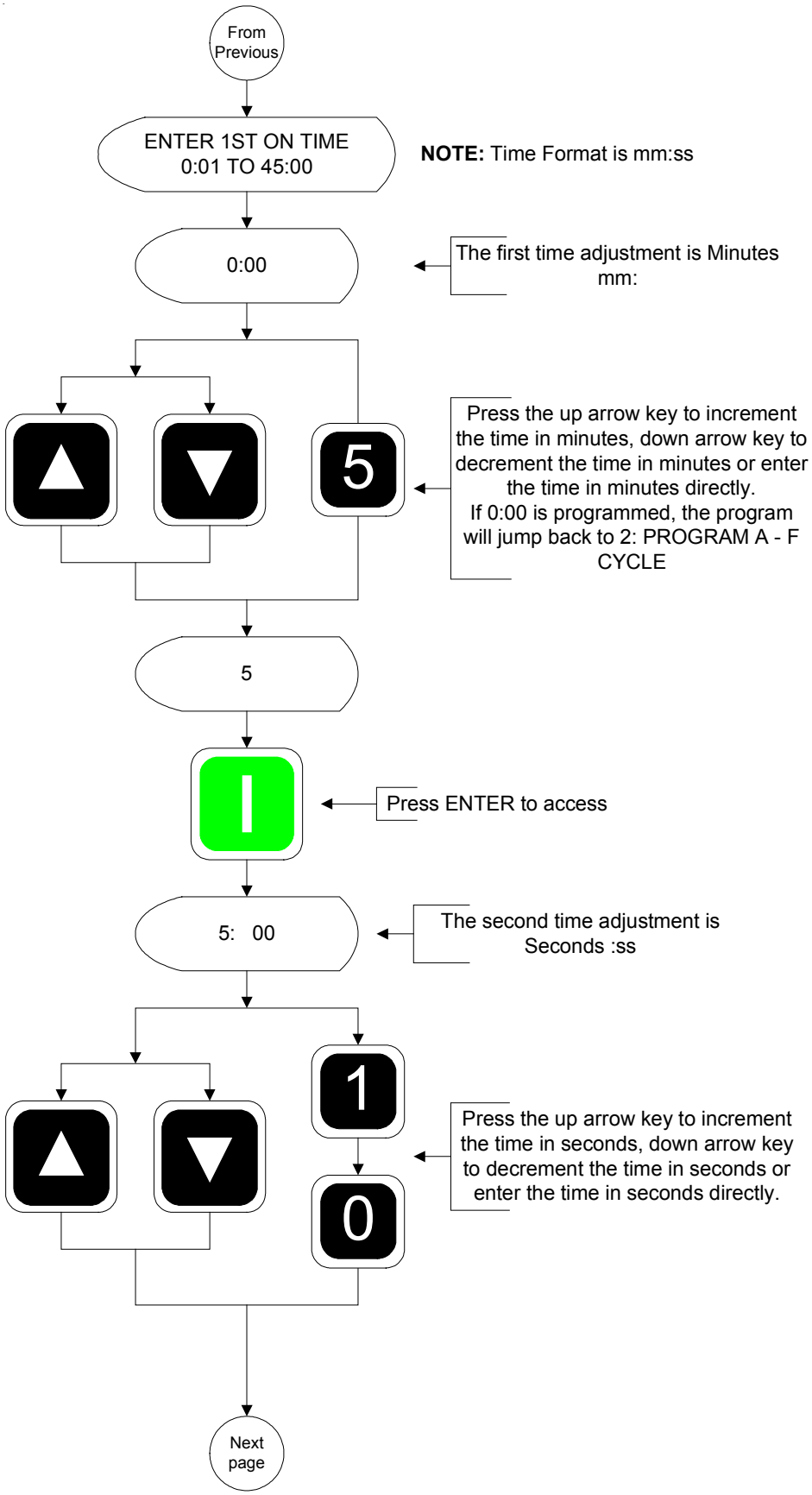


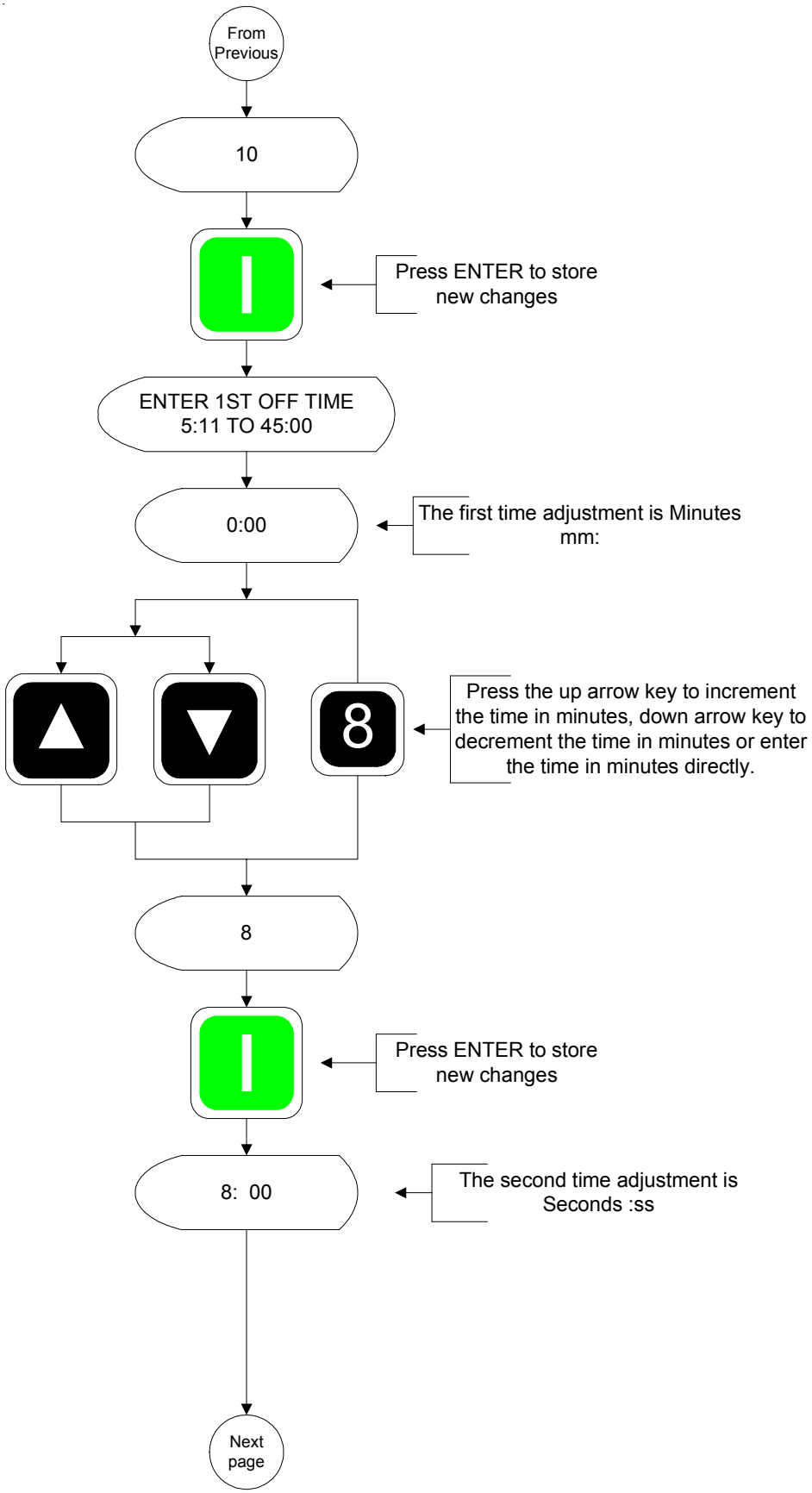

Next Page (A)
Next Page (B)
2: WRINKLE GUARD SETUP
Press ENTER to access
0: WRINKLE GUARD AUDIO ALERT
Press ENTER to access
ON
Press the up or down arrow key to select ON or OFF
OFF
Press ENTER to store new changes
0: WRINKLE GUARD AUDIO ALERT

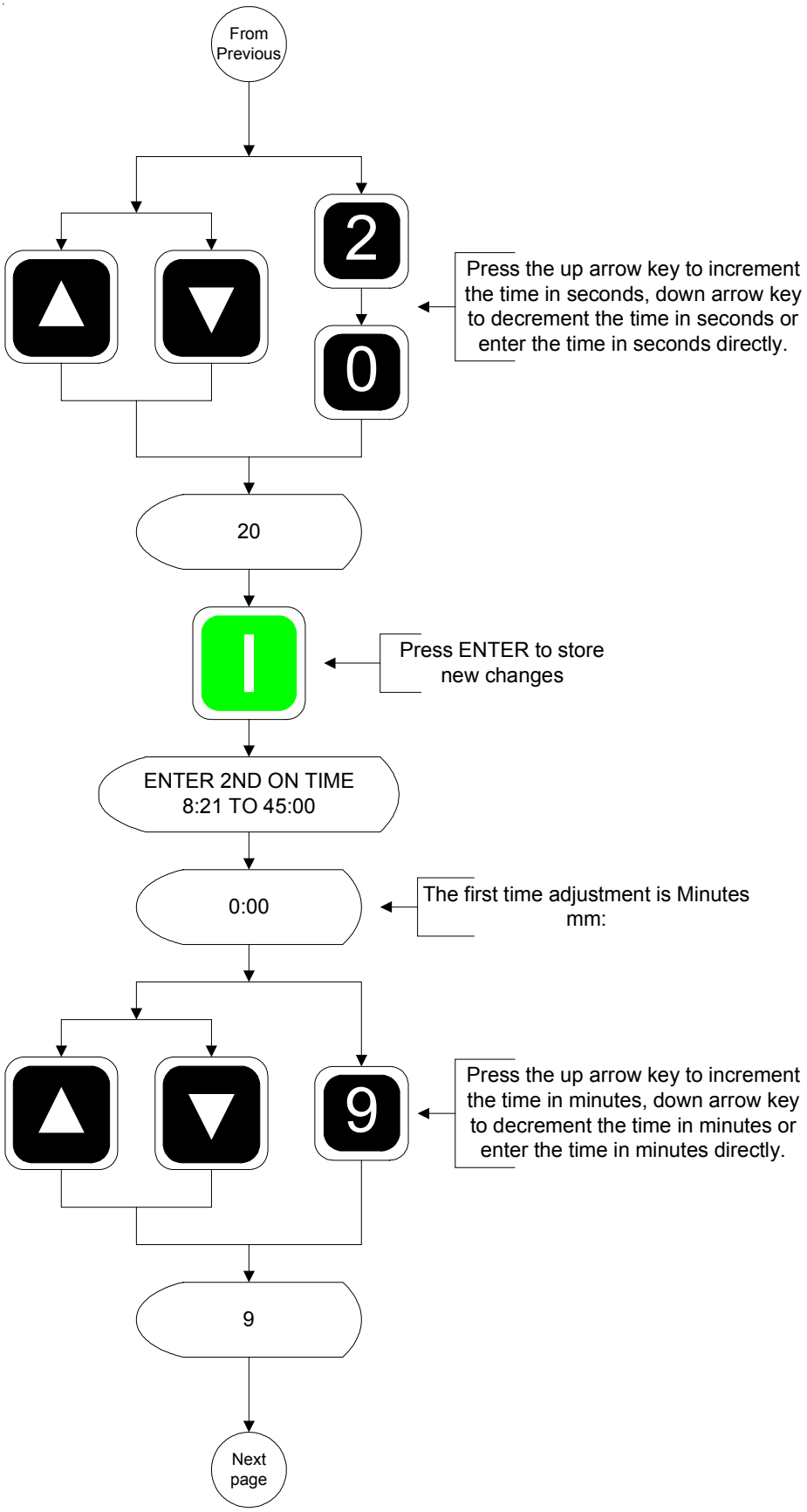
Steam Injection Setup

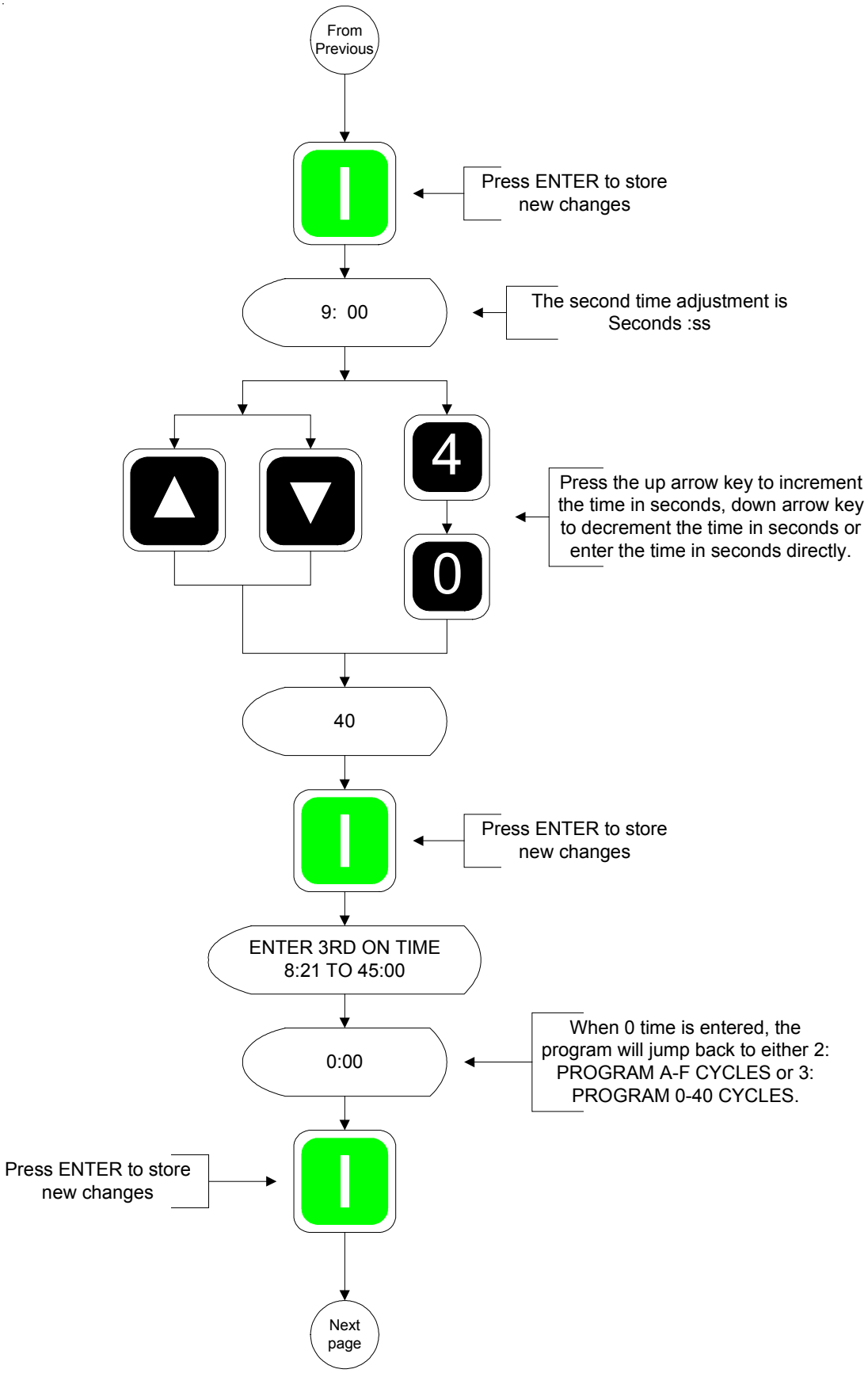


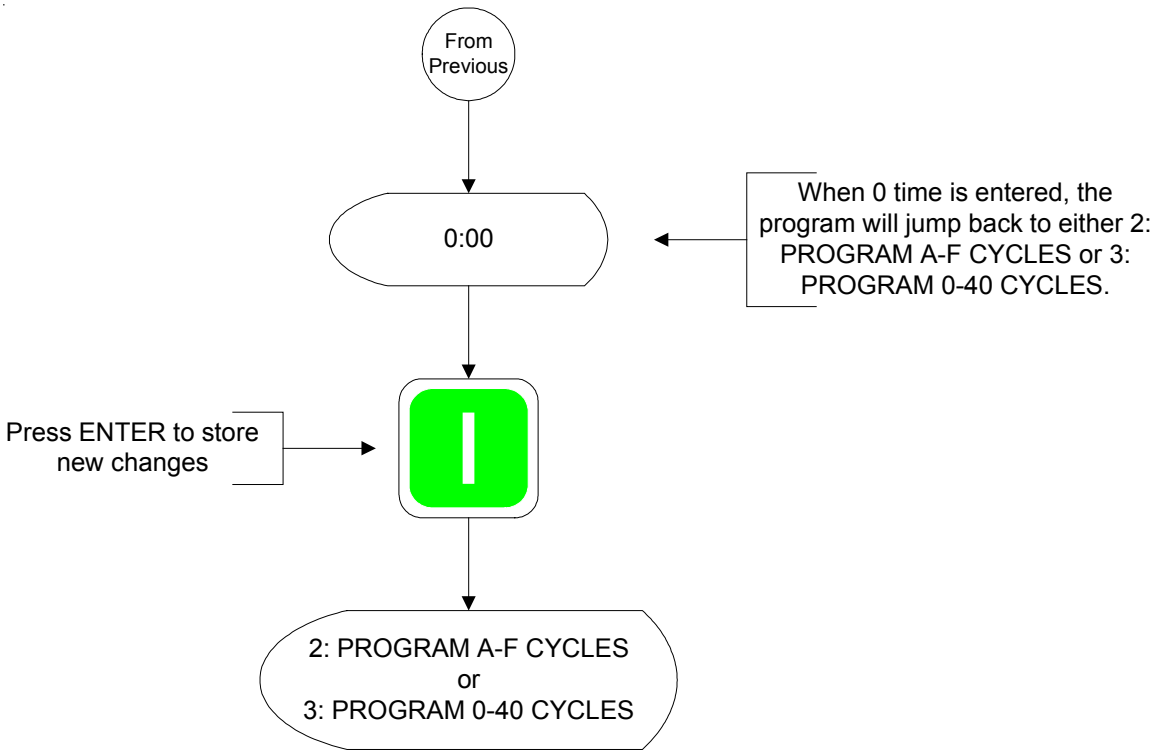

Next
Page (A)
Next
Page (B)
2: WRINKLE GUARD
SETUP
3: STEAM INJECTION
SETUP
Press ENTER to access
Next
page


From Previous
ENTER 1ST ON TIME
0:01 TO 45:00
NOTE: Time Format is mm:ss
0:00
The first time adjustment is Minutes mm:
5
Press the up arrow key to increment the time in minutes, down arrow key to decrement the time in minutes or enter the time in minutes directly.
If 0:00 is programmed, the program will jump back to 2: PROGRAM A - F CYCLE
5
Press ENTER to access
5: 00
The second time adjustment is Seconds :ss
1
0
Press the up arrow key to increment the time in seconds, down arrow key to decrement the time in seconds or enter the time in seconds directly.
Next page

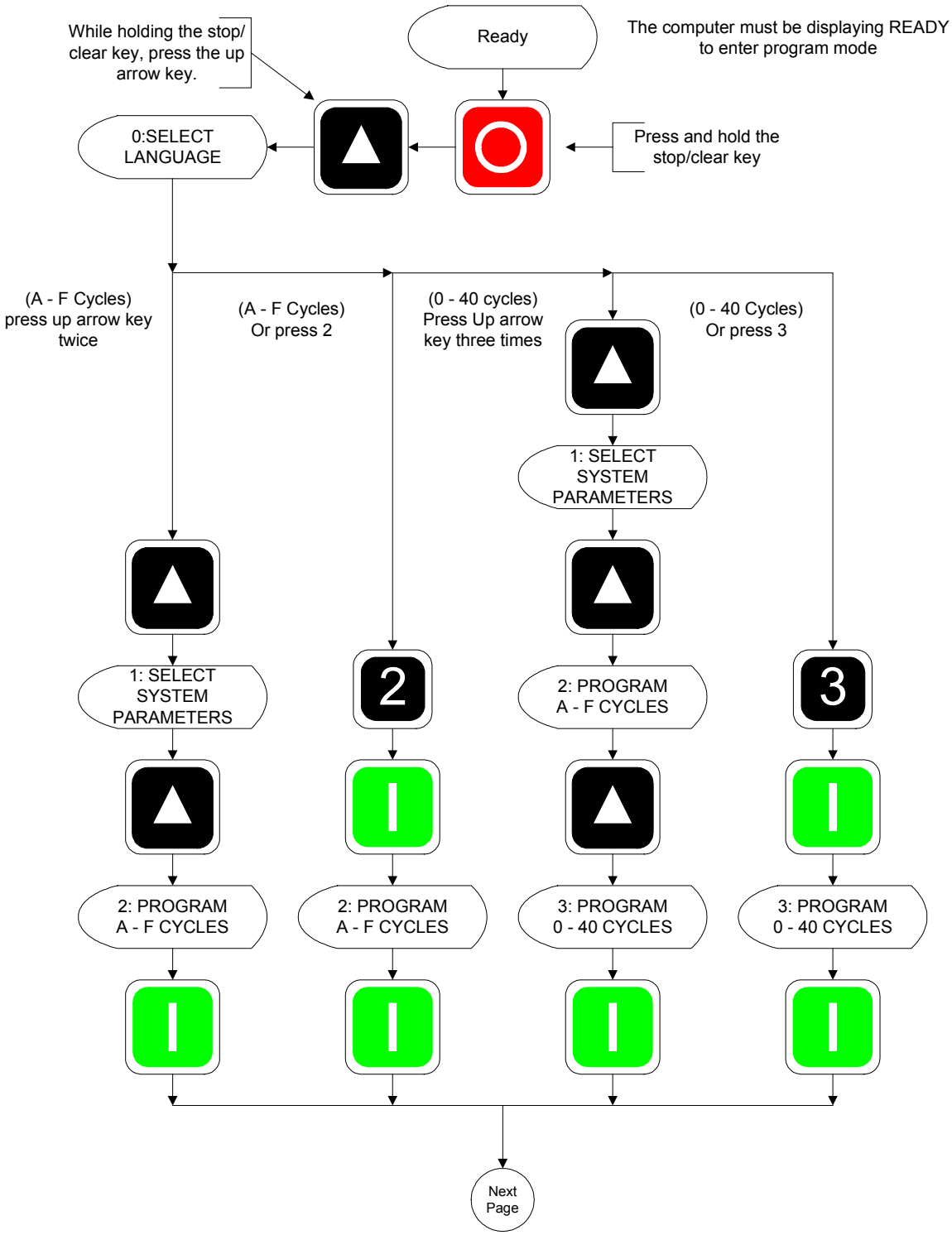

From Previous
10
Press ENTER to store new changes
ENTER 1ST OFF TIME 5:11 TO 45:00
0:00
The first time adjustment is Minutes mm:
8
Press the up arrow key to increment the time in minutes, down arrow key to decrement the time in minutes or enter the time in minutes directly.
8
Press ENTER to store new changes
8: 00
The second time adjustment is Seconds :ss
Next page

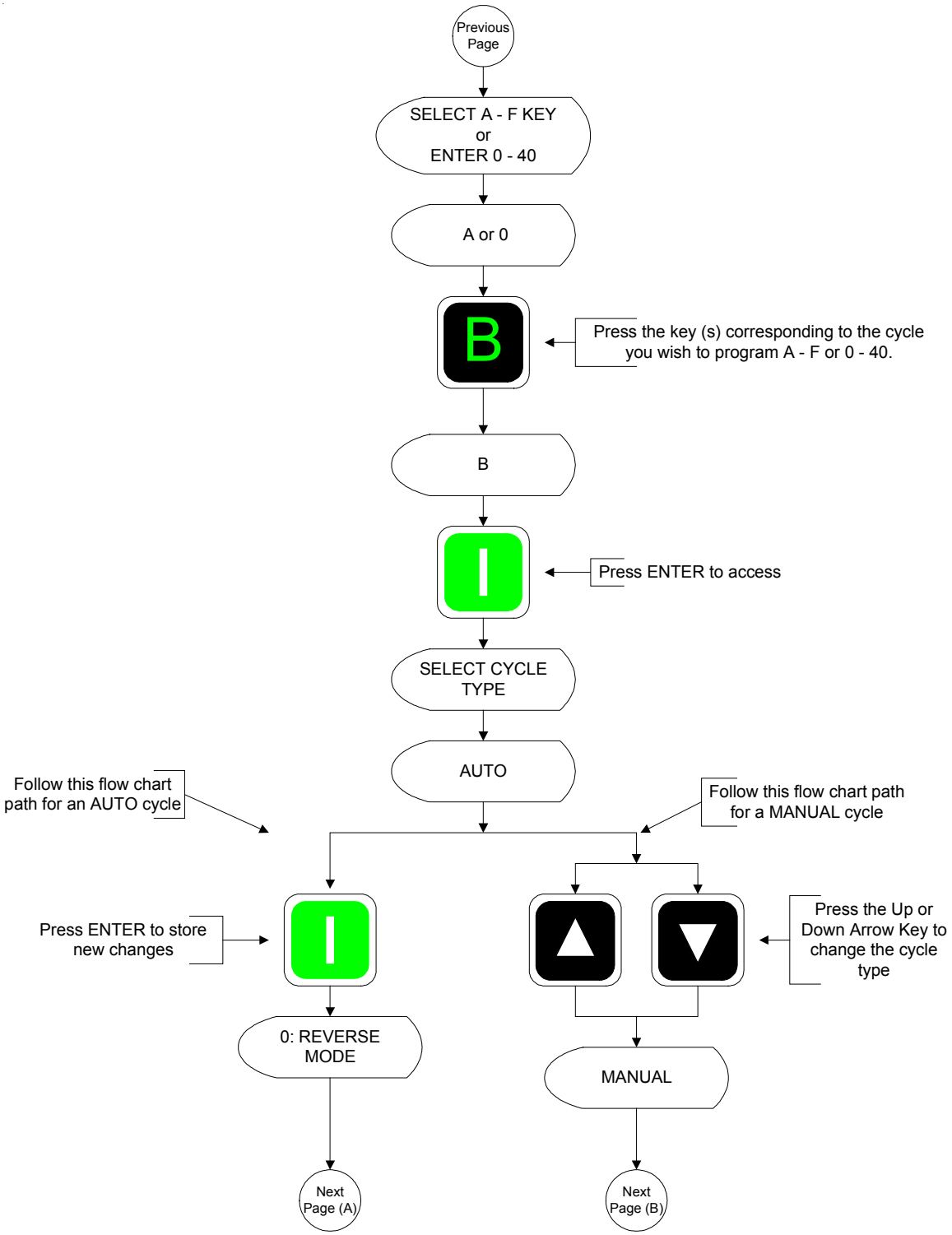

From Previous
2
0
Press the up arrow key to increment the time in seconds, down arrow key to decrement the time in seconds or enter the time in seconds directly.
20
Press ENTER to store new changes
ENTER 2ND ON TIME 8:21 TO 45:00
0:00
The first time adjustment is Minutes mm:
9
Press the up arrow key to increment the time in minutes, down arrow key to decrement the time in minutes or enter the time in minutes directly.
9
Next page

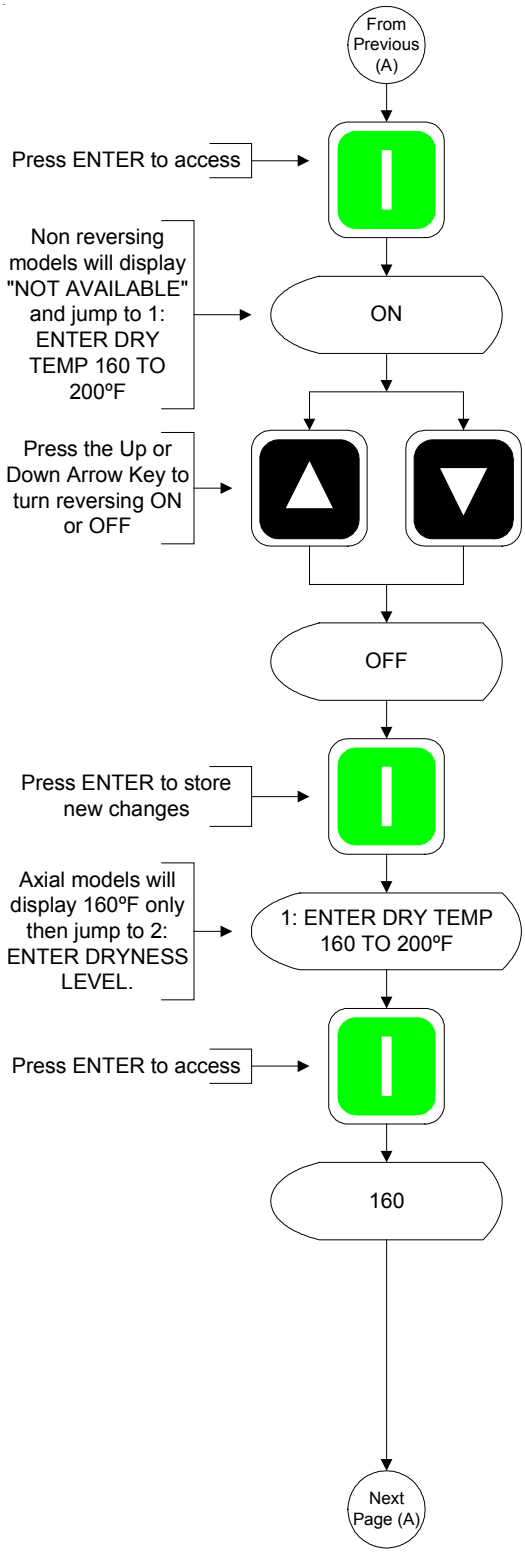

From Previous
Press ENTER to store new changes
9: 00
The second time adjustment is Seconds :ss
4
0
Press the up arrow key to increment the time in seconds, down arrow key to decrement the time in seconds or enter the time in seconds directly.
40
Press ENTER to store new changes
ENTER 3RD ON TIME 8:21 TO 45:00
0:00
When 0 time is entered, the program will jump back to either 2: PROGRAM A-F CYCLES or 3: PROGRAM 0-40 CYCLES.
Press ENTER to store new changes
Next page

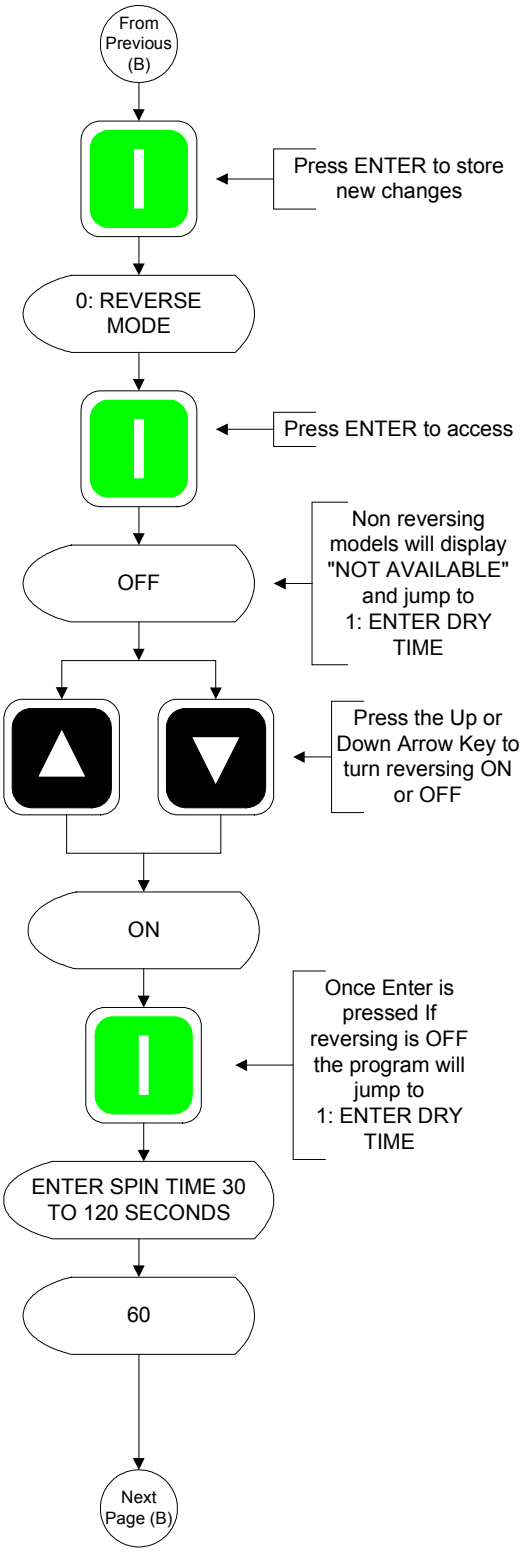

From Previous
0:00
When 0 time is entered, the program will jump back to either 2: PROGRAM A-F CYCLES or 3: PROGRAM 0-40 CYCLES.
Press ENTER to store new changes
2: PROGRAM A-F CYCLES
or
3: PROGRAM 0-40 CYCLES

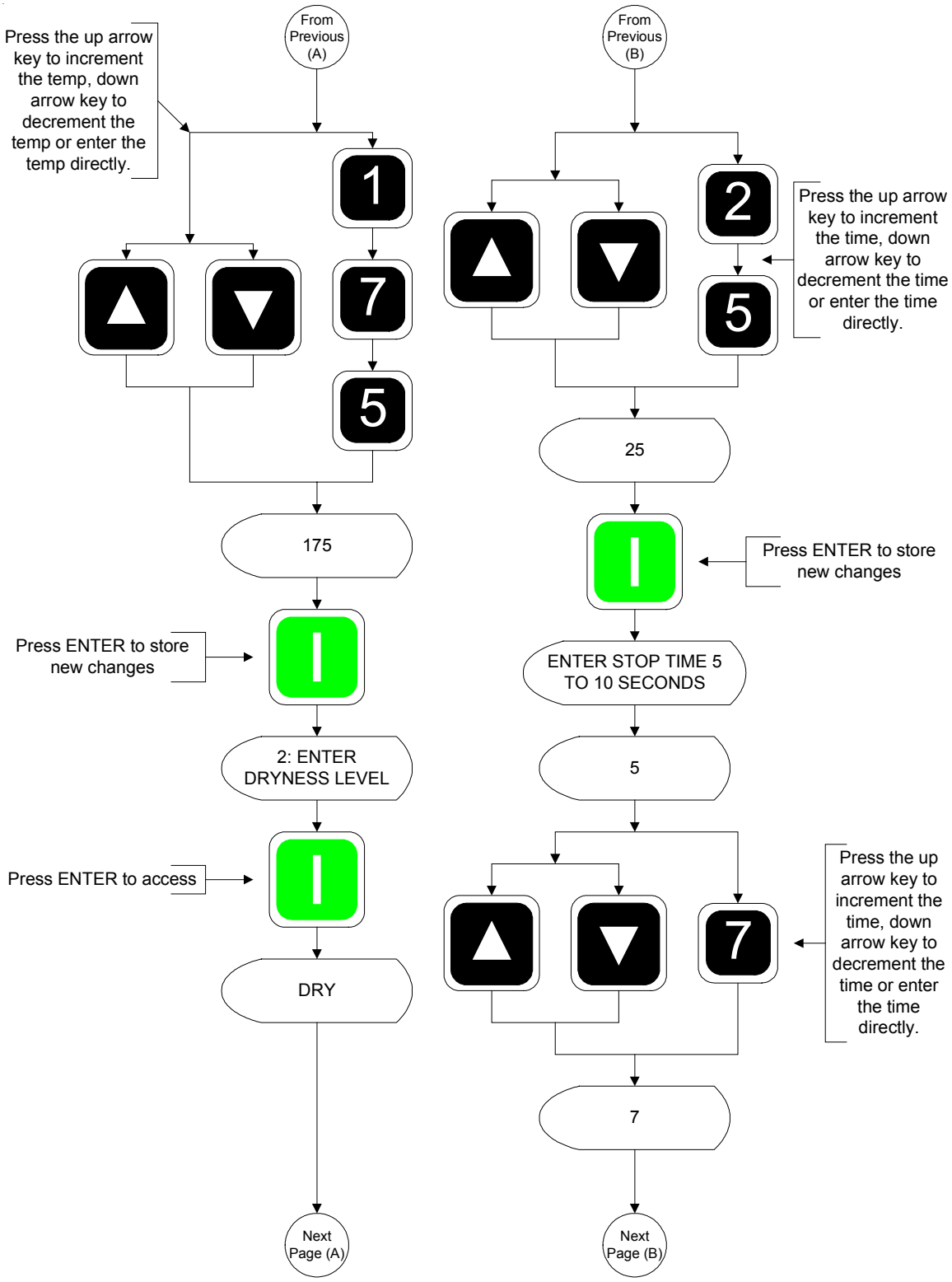
Programming A - F Cycles or 0 - 40 Cycles

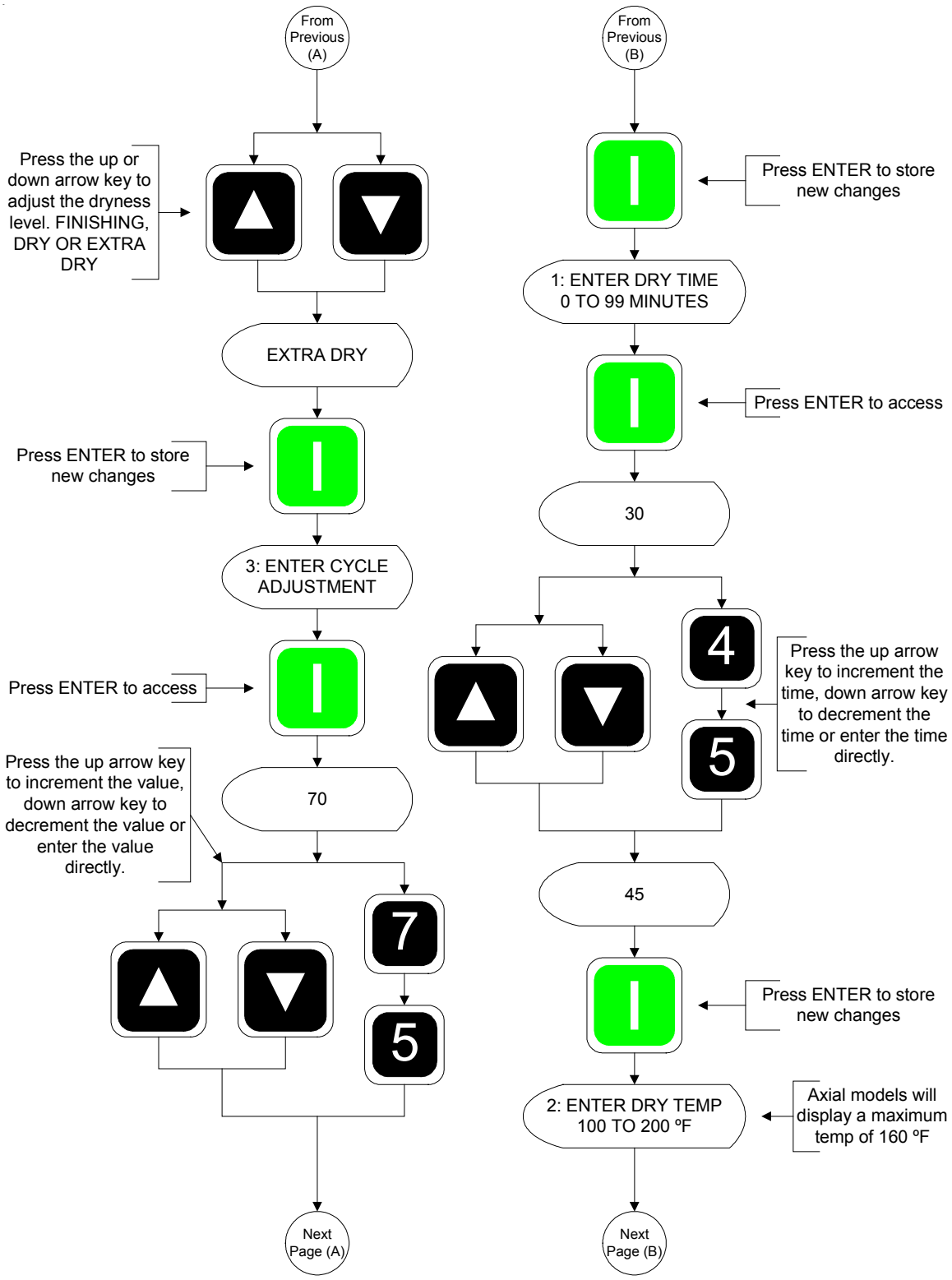

While holding the stop/ clear key, press the up arrow key.
Ready
The computer must be displaying READY to enter program mode
0:SELECT LANGUAGE
Press and hold the stop/clear key
(A - F Cycles) press up arrow key twice
(A - F Cycles) Or press 2
(0 - 40 cycles) Press Up arrow key three times
(0 - 40 Cycles) Or press 3
1: SELECT SYSTEM PARAMETERS
2
3
2: PROGRAM A - F CYCLES
3: PROGRAM 0 - 40 CYCLES
Next Page

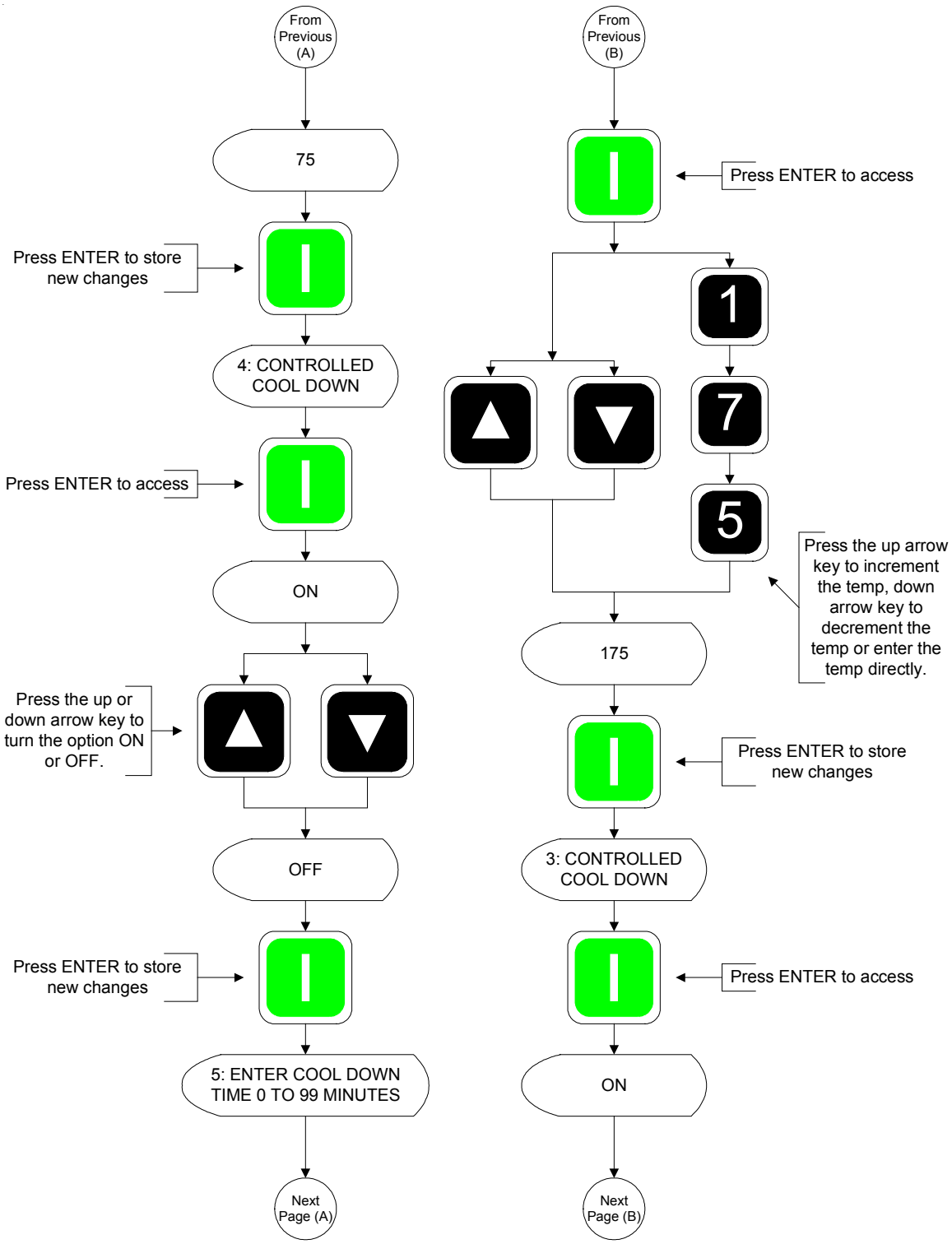

Previous Page
SELECT A - F KEY or ENTER 0 - 40
A or 0
B
Press the key (s) corresponding to the cycle you wish to program A - F or 0 - 40.
B
I
Press ENTER to access
SELECT CYCLE TYPE
AUTO
Follow this flow chart path for an AUTO cycle
Follow this flow chart path for a MANUAL cycle
Press ENTER to store new changes
I
Press the Up or Down Arrow Key to change the cycle type
0: REVERSE MODE
MANUAL
Next Page (A)
Next Page (B)

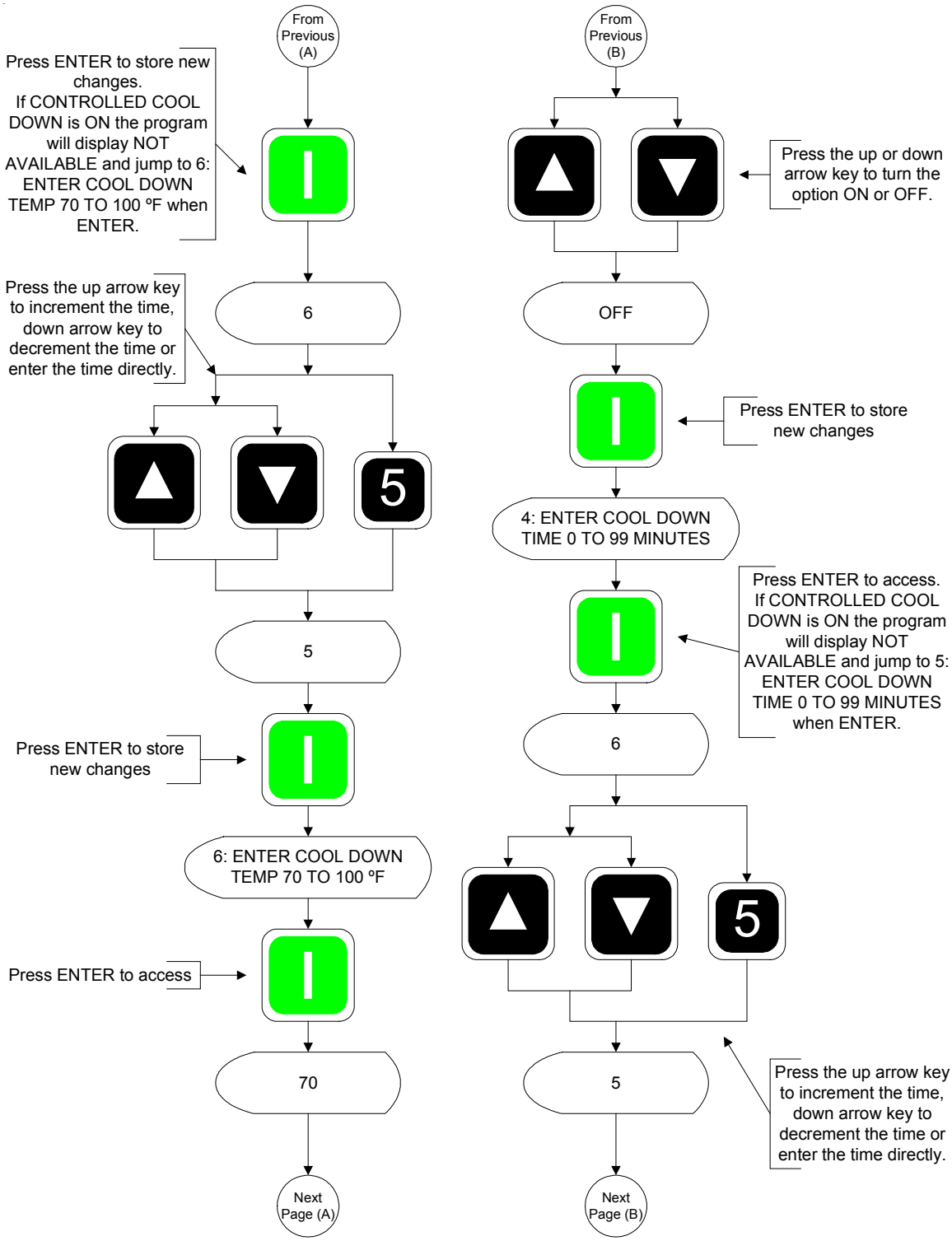

From Previous (A)
Press ENTER to access
Non reversing models will display "NOT AVAILABLE" and jump to 1: ENTER DRY TEMP 160 TO 200ºF
ON
Press the Up or Down Arrow Key to turn reversing ON or OFF
OFF
Press ENTER to store new changes
Axial models will display 160ºF only then jump to 2: ENTER DRYNESS LEVEL.
1: ENTER DRY TEMP 160 TO 200ºF
Press ENTER to access
160
Next Page (A)

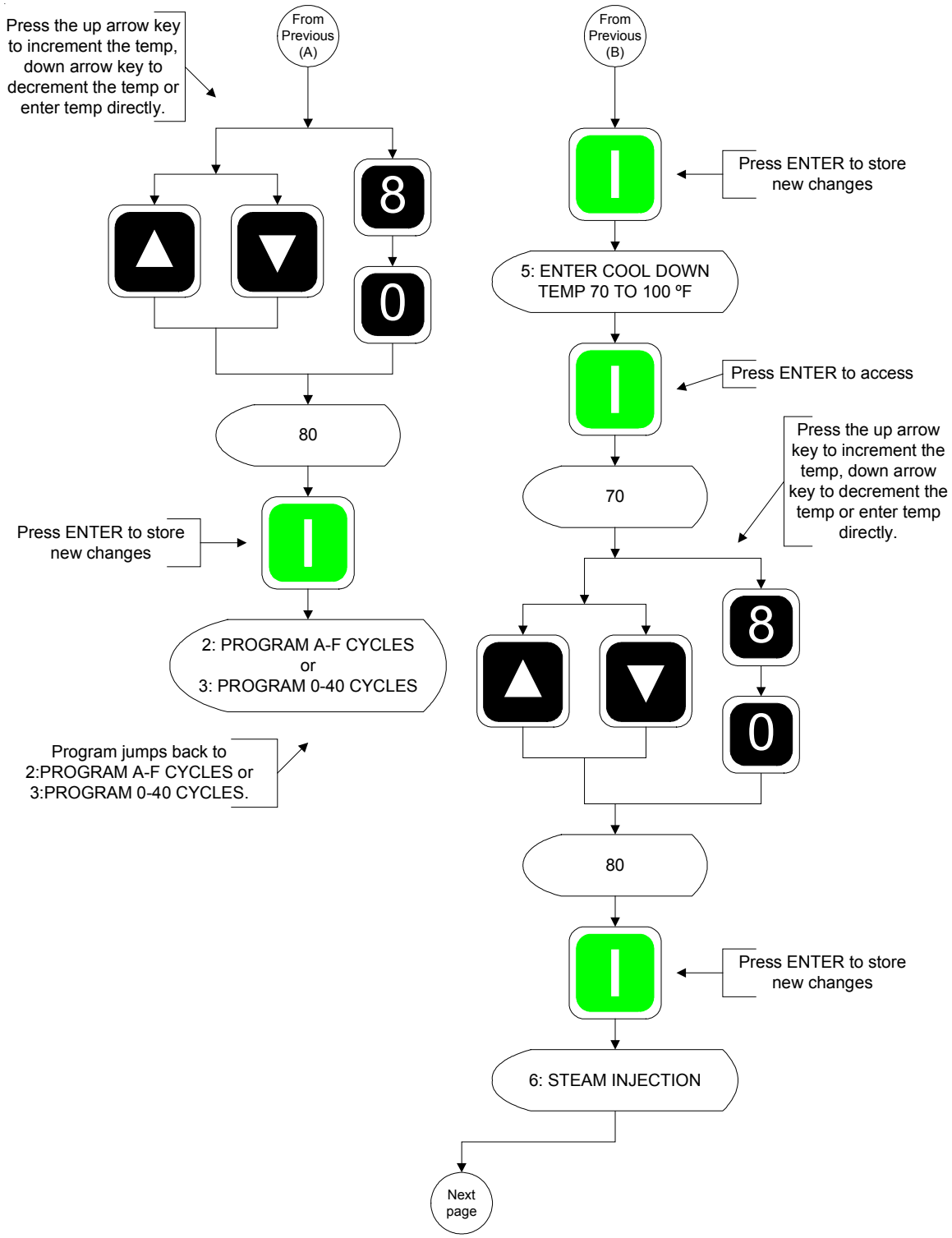

From Previous (B)
Press ENTER to store new changes
0: REVERSE MODE
Press ENTER to access
Non reversing models will display "NOT AVAILABLE" and jump to 1: ENTER DRY TIME
OFF
Press the Up or Down Arrow Key to turn reversing ON or OFF
ON
Once Enter is pressed If reversing is OFF the program will jump to 1: ENTER DRY TIME
ENTER SPIN TIME 30 TO 120 SECONDS
60
Next Page (B)

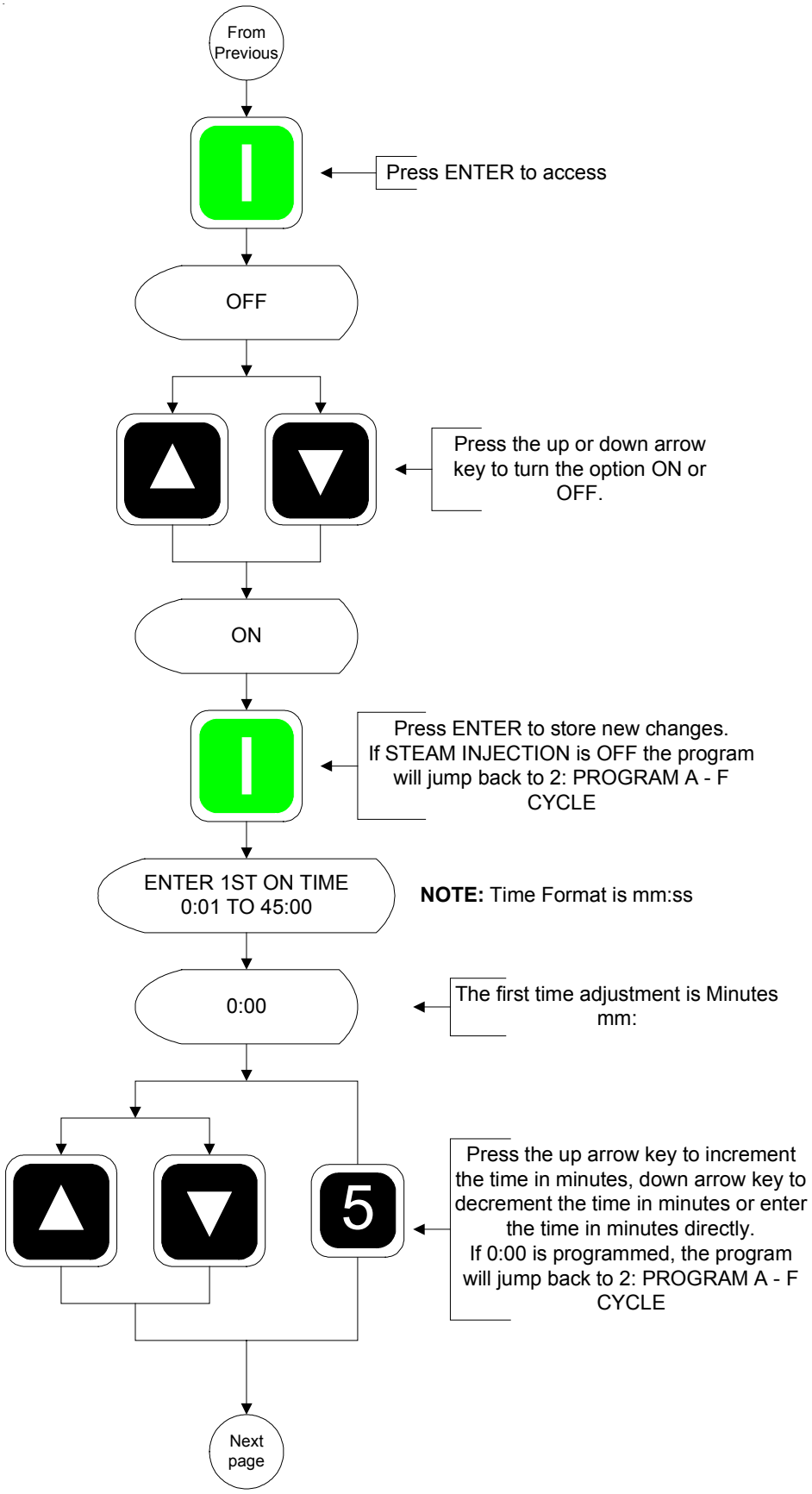

From Previous (A)
Press the up arrow key to increment the temp, down arrow key to decrement the temp or enter the temp directly.
1
7
5
175
Press ENTER to store new changes
2: ENTER DRYNESS LEVEL
Press ENTER to access
DRY
Next Page (A)
From Previous (B)
2
5
Press the up arrow key to increment the time, down arrow key to decrement the time or enter the time directly.
25
Press ENTER to store new changes
ENTER STOP TIME 5 TO 10 SECONDS
5
7
Press the up arrow key to increment the time, down arrow key to decrement the time or enter the time directly.
7
Next Page (B)

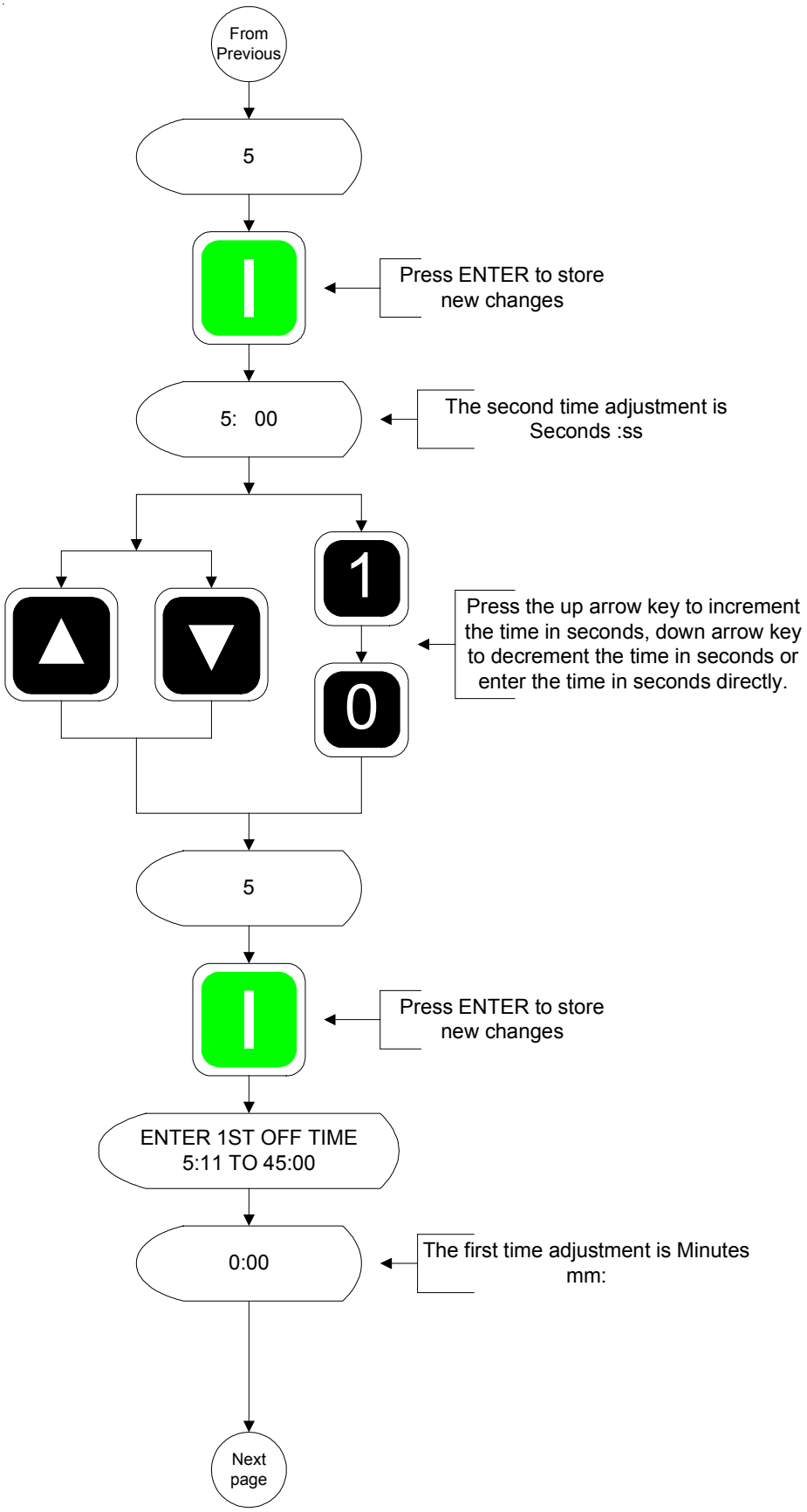

From Previous (A)
Press the up or down arrow key to adjust the dryness level. FINISHING, DRY OR EXTRA DRY
EXTRA DRY
Press ENTER to store new changes
3: ENTER CYCLE ADJUSTMENT
Press ENTER to access
Press the up arrow key to increment the value, down arrow key to decrement the value or enter the value directly.
70
7
5
Next Page (A)
From Previous (B)
Press ENTER to store new changes
1: ENTER DRY TIME 0 TO 99 MINUTES
Press ENTER to access
30
4
5
Press the up arrow key to increment the time, down arrow key to decrement the time or enter the time directly.
45
Press ENTER to store new changes
2: ENTER DRY TEMP 100 TO 200 ºF
Axial models will display a maximum temp of 160 ºF
Next Page (B)

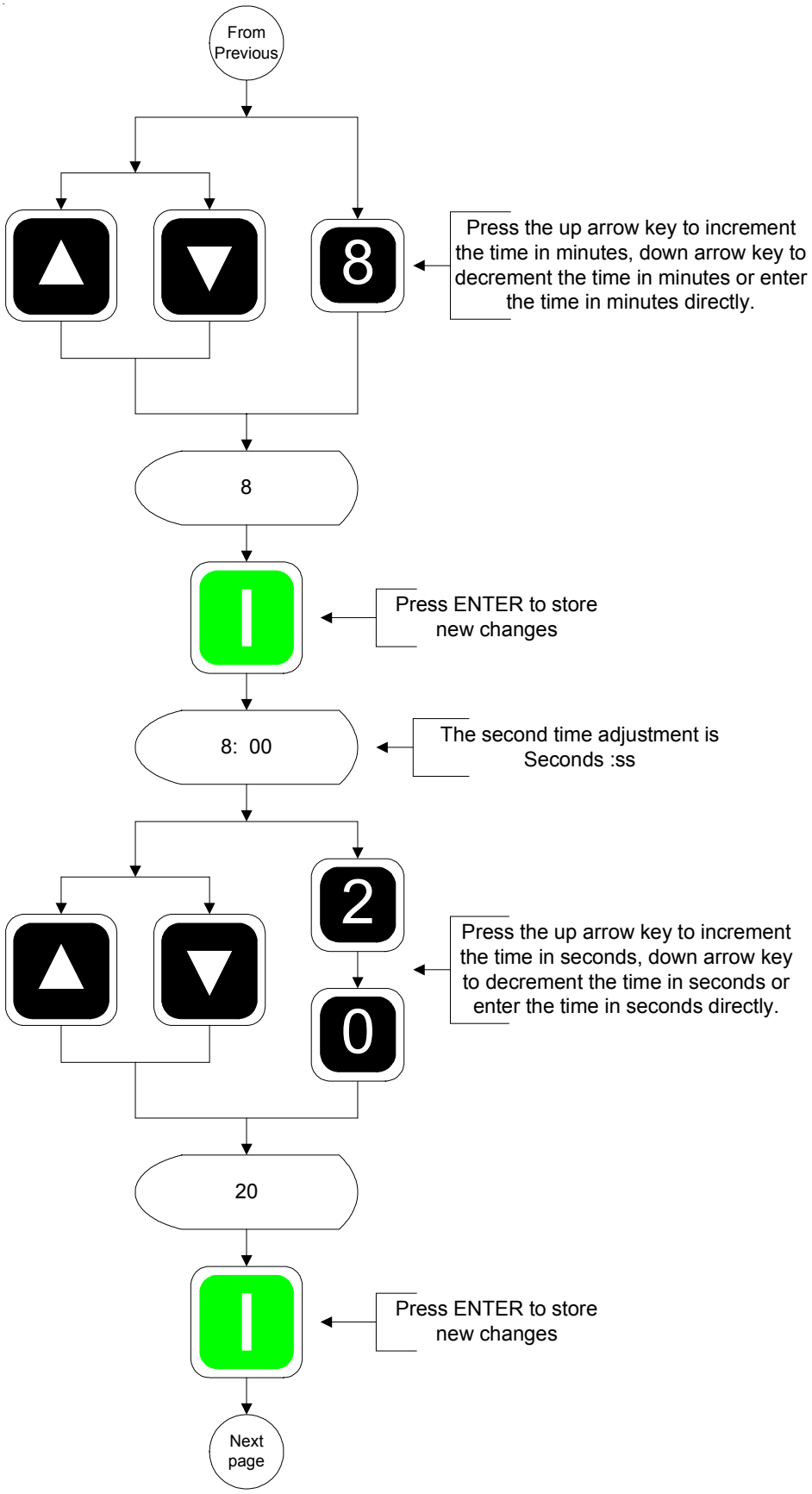

From Previous (A)
75
Press ENTER to store new changes
4: CONTROLLED COOL DOWN
Press ENTER to access
ON
Press the up or down arrow key to turn the option ON or OFF.
OFF
Press ENTER to store new changes
5: ENTER COOL DOWN TIME 0 TO 99 MINUTES
Next Page (A)
From Previous (B)
Press ENTER to access
1
7
5
Press the up arrow key to increment the temp, down arrow key to decrement the temp or enter the temp directly.
175
Press ENTER to store new changes
3: CONTROLLED COOL DOWN
Press ENTER to access
ON
Next Page (B)

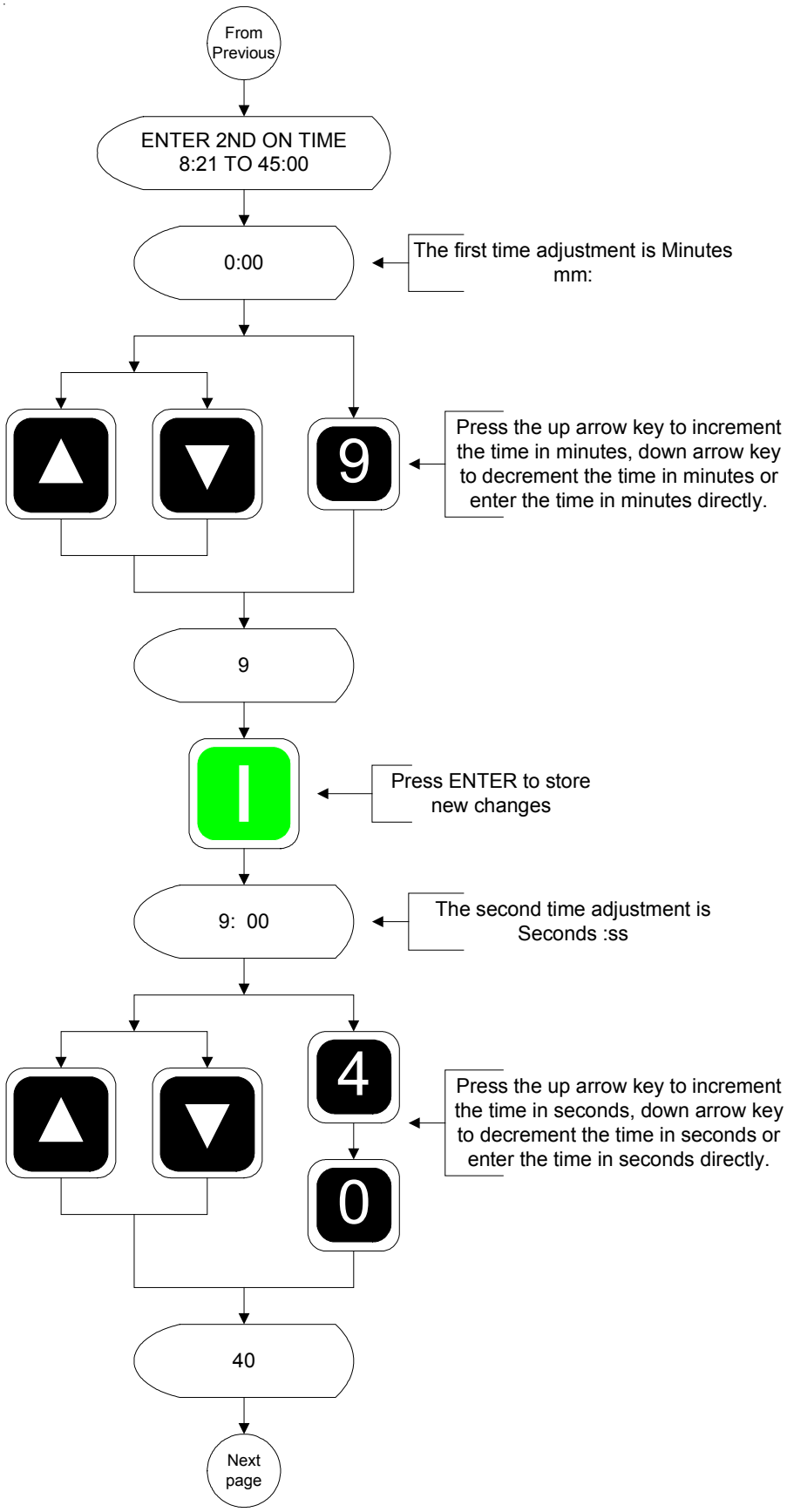

From Previous (A)
Press ENTER to store new changes. If CONTROLLED COOL DOWN is ON the program will display NOT AVAILABLE and jump to 6: ENTER COOL DOWN TEMP 70 TO 100 ºF when ENTER.
6
Press the up arrow key to increment the time, down arrow key to decrement the time or enter the time directly.
5
5
Press ENTER to store new changes
6: ENTER COOL DOWN TEMP 70 TO 100 ºF
Press ENTER to access
70
Next Page (A)
From Previous (B)
Press the up or down arrow key to turn the option ON or OFF.
OFF
Press ENTER to store new changes
4: ENTER COOL DOWN TIME 0 TO 99 MINUTES
Press ENTER to access. If CONTROLLED COOL DOWN is ON the program will display NOT AVAILABLE and jump to 5: ENTER COOL DOWN TIME 0 TO 99 MINUTES when ENTER.
6
5
5
Press the up arrow key to increment the time, down arrow key to decrement the time or enter the time directly.
Next Page (B)

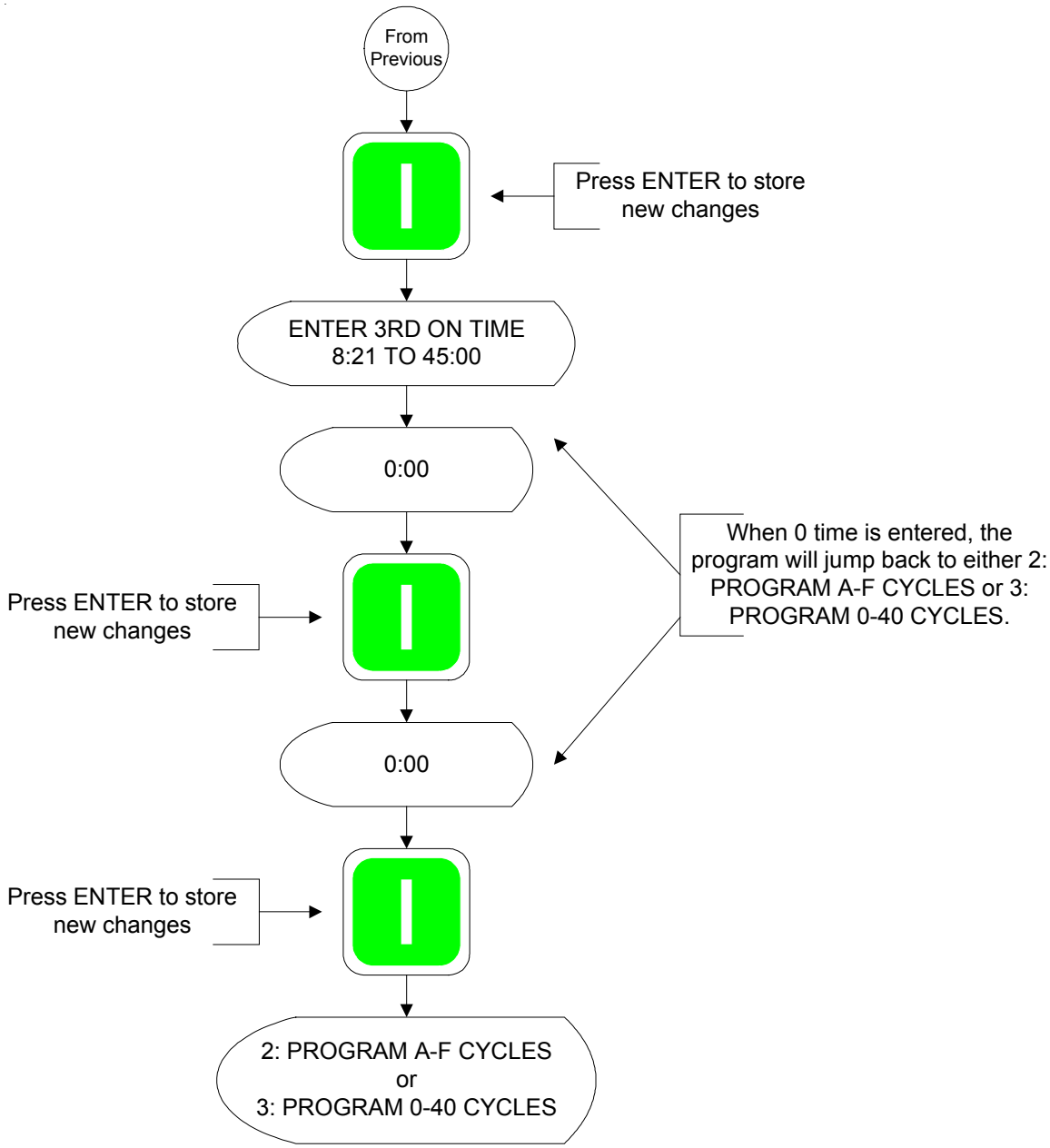

From Previous (A)
Press the up arrow key to increment the temp, down arrow key to decrement the temp or enter temp directly.
8
0
80
Press ENTER to store new changes
2: PROGRAM A-F CYCLES
or
3: PROGRAM 0-40 CYCLES
Program jumps back to 2:PROGRAM A-F CYCLES or 3:PROGRAM 0-40 CYCLES.
From Previous (B)
Press ENTER to store new changes
5: ENTER COOL DOWN TEMP 70 TO 100 ºF
Press ENTER to access
70
Press the up arrow key to increment the temp, down arrow key to decrement the temp or enter temp directly.
8
0
80
Press ENTER to store new changes
6: STEAM INJECTION
Next page


From Previous
Press ENTER to access
OFF
Press the up or down arrow key to turn the option ON or OFF.
ON
Press ENTER to store new changes. If STEAM INJECTION is OFF the program will jump back to 2: PROGRAM A - F CYCLE
ENTER 1ST ON TIME 0:01 TO 45:00
NOTE: Time Format is mm:ss
0:00
The first time adjustment is Minutes mm:
5
Press the up arrow key to increment the time in minutes, down arrow key to decrement the time in minutes or enter the time in minutes directly. If 0:00 is programmed, the program will jump back to 2: PROGRAM A - F CYCLE
Next page

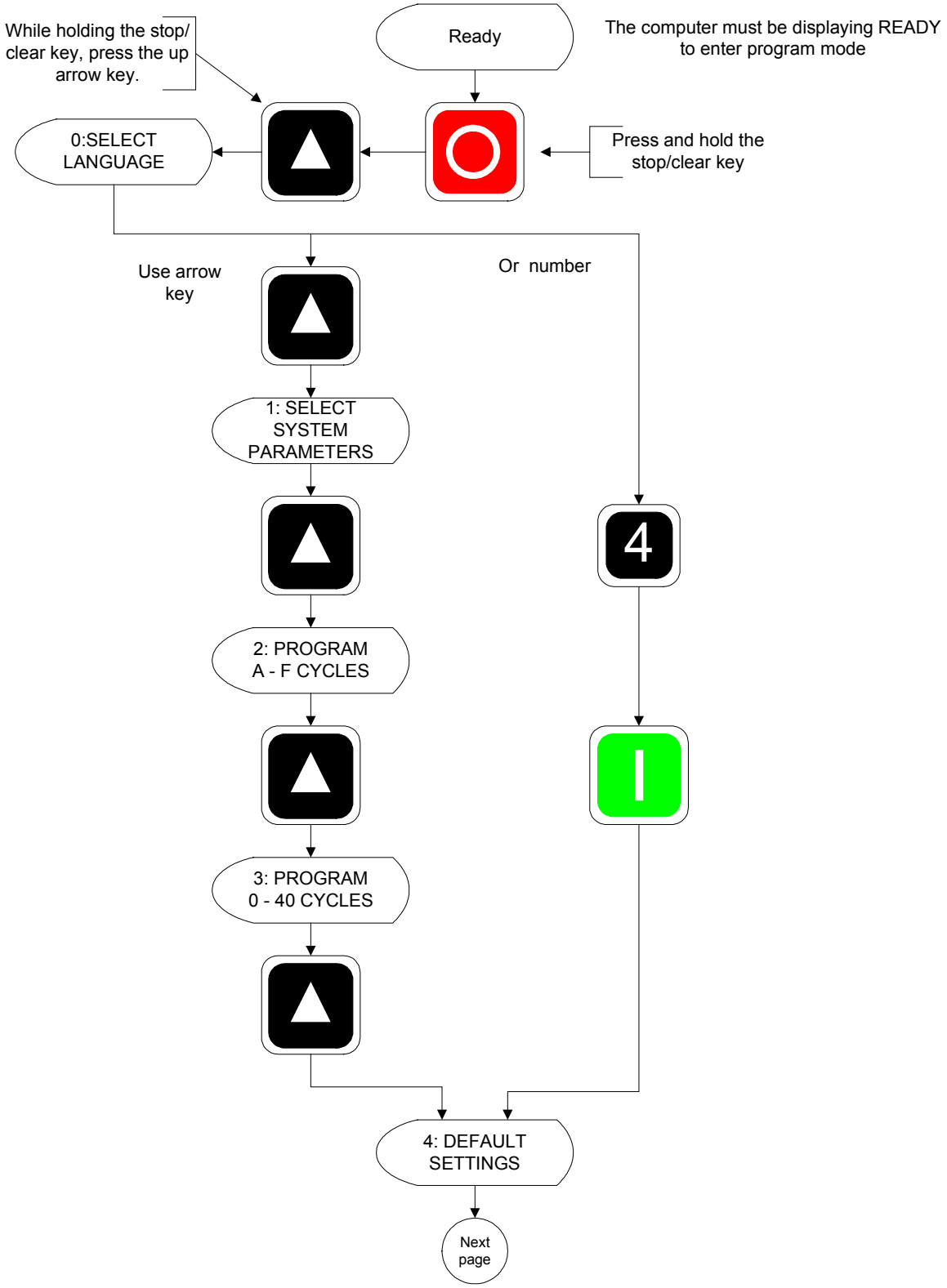

From Previous
5
Press ENTER to store new changes
5: 00
The second time adjustment is Seconds :ss
1
0
Press the up arrow key to increment the time in seconds, down arrow key to decrement the time in seconds or enter the time in seconds directly.
5
Press ENTER to store new changes
ENTER 1ST OFF TIME 5:11 TO 45:00
0:00
The first time adjustment is Minutes mm:
Next page

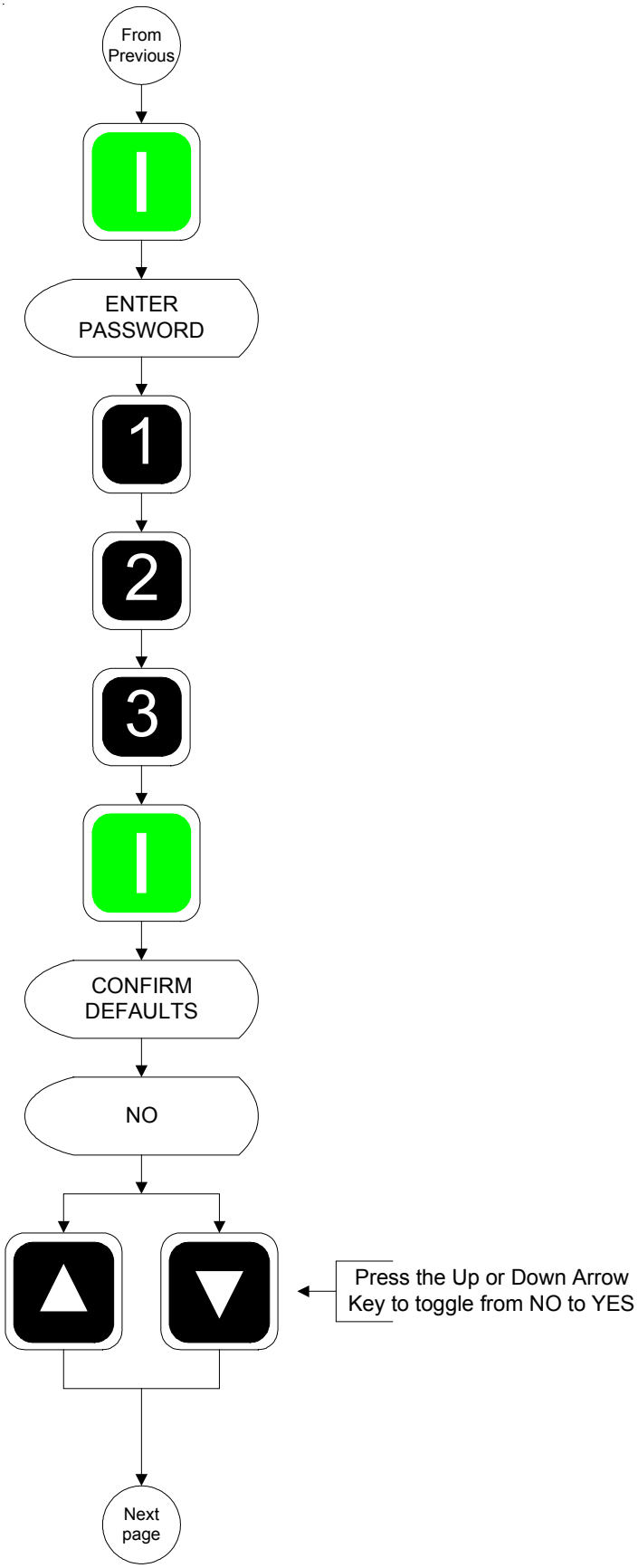

From Previous
8
Press the up arrow key to increment the time in minutes, down arrow key to decrement the time in minutes or enter the time in minutes directly.
8
Press ENTER to store new changes
8: 00
The second time adjustment is Seconds :ss
2
0
Press the up arrow key to increment the time in seconds, down arrow key to decrement the time in seconds or enter the time in seconds directly.
20
Press ENTER to store new changes
Next page

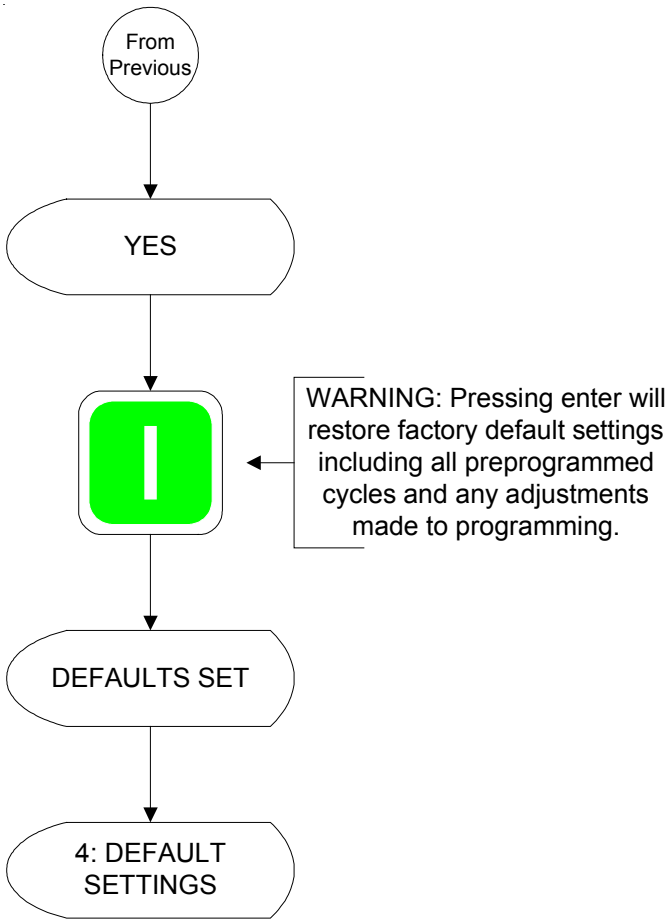

From Previous
ENTER 2ND ON TIME 8:21 TO 45:00
0:00
The first time adjustment is Minutes mm:
9
Press the up arrow key to increment the time in minutes, down arrow key to decrement the time in minutes or enter the time in minutes directly.
9
Press ENTER to store new changes
9: 00
The second time adjustment is Seconds :ss
4
0
Press the up arrow key to increment the time in seconds, down arrow key to decrement the time in seconds or enter the time in seconds directly.
40
Next page


From Previous
Press ENTER to store new changes
ENTER 3RD ON TIME 8:21 TO 45:00
0:00
When 0 time is entered, the program will jump back to either 2: PROGRAM A-F CYCLES or 3: PROGRAM 0-40 CYCLES.
Press ENTER to store new changes
0:00
Press ENTER to store new changes
2: PROGRAM A-F CYCLES or 3: PROGRAM 0-40 CYCLES

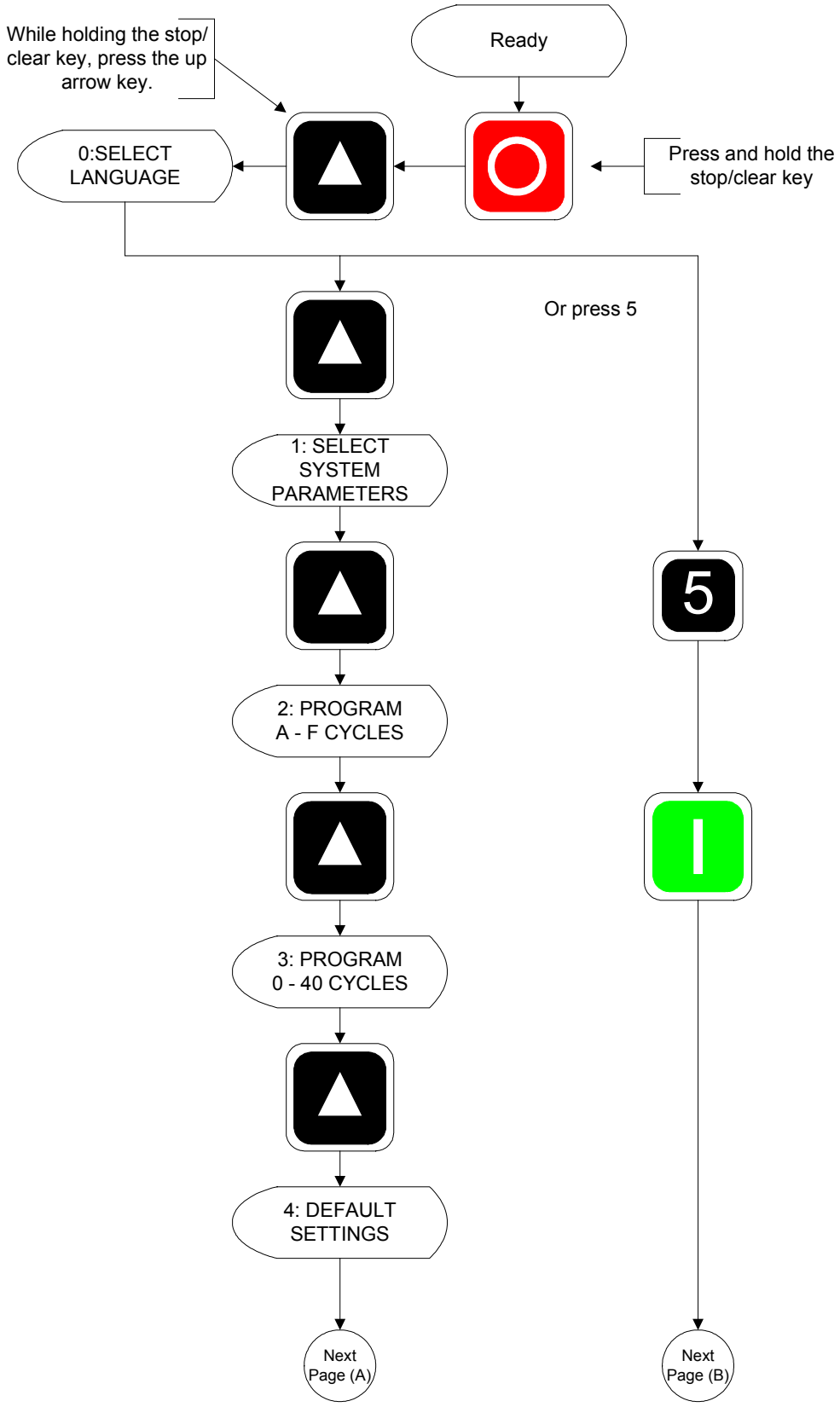
Restoring Factory Default Settings

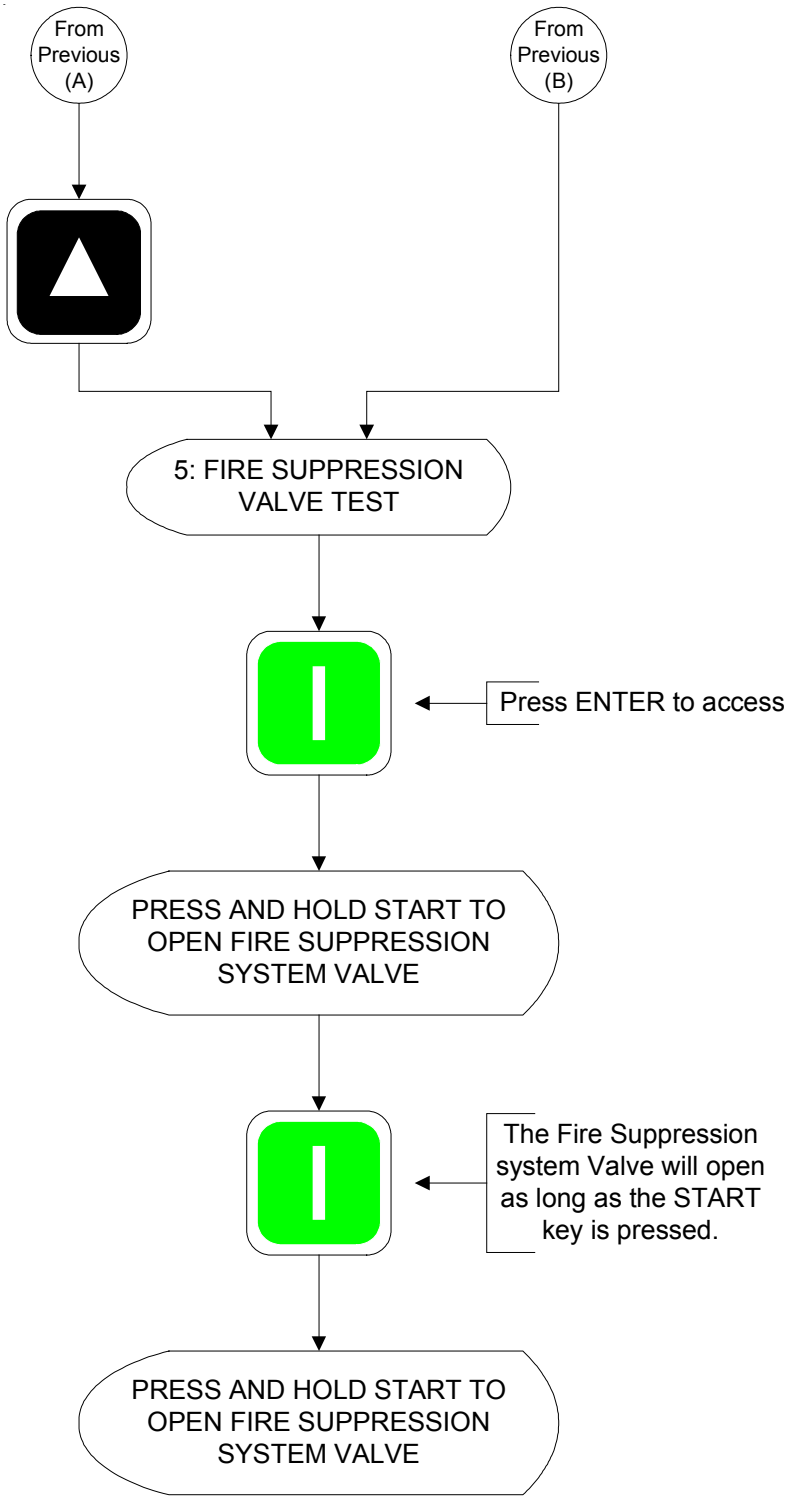

While holding the stop/ clear key, press the up arrow key.
Ready
The computer must be displaying READY to enter program mode
0:SELECT LANGUAGE
Press and hold the stop/clear key
Use arrow key
Or number
1: SELECT SYSTEM PARAMETERS
4
2: PROGRAM A - F CYCLES
3: PROGRAM 0 - 40 CYCLES
4: DEFAULT SETTINGS
Next page


From Previous
I
ENTER PASSWORD
1
2
3
I
CONFIRM DEFAULTS
NO
Press the Up or Down Arrow Key to toggle from NO to YES
Next page


From Previous
YES
WARNING: Pressing enter will restore factory default settings including all preprogrammed cycles and any adjustments made to programming.
DEFAULTS SET
4: DEFAULT SETTINGS

Fire Suppression Valve Test


Ready
While holding the stop/ clear key, press the up arrow key.
0:SELECT LANGUAGE
Press and hold the stop/clear key
Or press 5
1: SELECT SYSTEM PARAMETERS
2: PROGRAM A - F CYCLES
3: PROGRAM 0 - 40 CYCLES
4: DEFAULT SETTINGS
5
Next Page (A)
Next Page (B)


From Previous (A)
From Previous (B)
5: FIRE SUPPRESSION VALVE TEST
Press ENTER to access
PRESS AND HOLD START TO OPEN FIRE SUPPRESSION SYSTEM VALVE
The Fire Suppression system Valve will open as long as the START key is pressed.
PRESS AND HOLD START TO OPEN FIRE SUPPRESSION SYSTEM VALVE

NOTE: “NO” WILL RETURN YOU BACK TO “4: DEFAULT SETTINGS”
“YES” WILL SET **ALL** THE PARAMETERS TO THE DEFAULT SETTINGS. DISPLAY WILL READ “DEFAULTS SET” and RETURN TO “4: DEFAULT SETTINGS”

SECTION VII

FACTORY PRESET PARAMETERS (PROGRAMS)

NOTE: To enter program mode press and hold the stop ⊙ and press the ▲ up arrow.

A. CYCLE "A-F" PARAMETERS (PROGRAMS) PRESET BY THE FACTORY

CYCLE A:
SELECT CYCLE TYPE = AUTO, 0:REVERSE MODE = ON, 1:ENTER DRY TEMP = 180°F, 2:ENTER DRYNESS LEVEL = EXTRA DRY, 3:ENTER CYCLE ADJUSTMENT VALUE = 70, 4:CONTROLLED COOL DOWN = OFF, 5:ENTER COOL DOWN TIME = 6 MINUTES, 5:ENTER COOL DOWN TEMP = 80°F

CYCLE B:
SELECT CYCLE TYPE = AUTO, 0:REVERSE MODE = ON, 1:ENTER DRY TEMP = 180°F, 2:ENTER DRYNESS LEVEL = DRY, 3:ENTER CYCLE ADJUSTMENT VALUE = 70, 4:CONTROLLED COOL DOWN = OFF, 5:ENTER COOL DOWN TIME = 6 MINUTES, 5:ENTER COOL DOWN TEMP = 80°F

CYCLE C:
SELECT CYCLE TYPE = AUTO, 0:REVERSE MODE = ON, 1:ENTER DRY TEMP = 160°F, 2:ENTER DRYNESS LEVEL = DRY, 3:ENTER CYCLE ADJUSTMENT VALUE = 70, 4:CONTROLLED COOL DOWN = OFF, 5:ENTER COOL DOWN TIME = 4 MINUTES, 5:ENTER COOL DOWN TEMP = 80°F

CYCLE D:
SELECT CYCLE TYPE = MANUAL, 0:REVERSE MODE = ON, ENTER SPIN TIME = 60 SECONDS, ENTER STOP TIME = 5 SECONDS, 1:ENTER DRY TIME = 40 MINUTES, 2:ENTER DRY TEMP = 190°F, 3:CONTROLLED COOL DOWN = OFF, 4:ENTER COOL DOWN TIME = 6 MINUTES, 5:ENTER COOL DOWN TEMP = 80°F, 6:STEAM INJECTION = OFF

CYCLE E:
SELECT CYCLE TYPE = MANUAL, 0:REVERSE MODE = ON, ENTER SPIN TIME = 60 SECONDS, ENTER STOP TIME = 5 SECONDS, 1:ENTER DRY TIME = 30 MINUTES, 2:ENTER DRY TEMP = 180°F, 3:CONTROLLED COOL DOWN = OFF, 4:ENTER COOL DOWN TIME = 4 MINUTES, 5:ENTER COOL DOWN TEMP = 80°F, 6:STEAM INJECTION = OFF

CYCLE F:
SELECT CYCLE TYPE = MANUAL, 0:REVERSE MODE = ON, ENTER SPIN TIME = 60 SECONDS, ENTER STOP TIME = 5 SECONDS, 1:ENTER DRY TIME = 10 MINUTES, 2:ENTER DRY TEMP = 170°F, 3:CONTROLLED COOL DOWN = OFF, 4:ENTER COOL DOWN TIME = 2 MINUTES, 5:ENTER COOL DOWN TEMP = 80°F, 6:STEAM INJECTION = OFF

B. CYCLE "0-40" PARAMETERS (PROGRAMS) PRESET BY THE FACTORY

CYCLE "0-40":

Manual (Timed) Mode, Reverse, Dry Time = 0, Dry Temp = 100, Cool Down Time = 3 Minutes, Cool Down Temp = 100, Spin Time = 60, Dwell (Stop) Time = 7.

SECTION VIII

PHASE 7 OPL PROGRAMMING LIMITS

A. PREPROGRAMMED CYCLES

1. Automatic Drying Cycle **(Patent No. 4,827,627)**

   a. Drying Temperature from 160º F to 200º F (71º C to 93º C) in one-degree increments.

   b. Cycle Adjustment Value from 0-99 in increments of one (1).

   c. Cool Down Time from 0 to 99 minutes in 1 minute increments.

   d. Cool Down Temperature from 70º F to 100º F (21º C to 38º C) in one-degree increments.

2. Timed (Manual) Drying Cycle

   a. Drying Temperature from 100º F to 200º F (38º C to 93º C) in one-degree increments.

   b. Drying Time from 0 to 99 minutes in 1 minute increments.

   c. Cool Down Time from 0 to 99 minutes in 1 minute increments for preprogrammed cycle.

   d. Cool Down Temperature from 70º F to 100º F (21º C to 38º C) in one-degree increments.

   e. Reversing Models

      1) Automatic Drying Cycle **(Patent No. 4,827,627)** Spin Time and Stop Time is not programmable. (Refer to **Fixed Parameters** on next page).

      2) Manual Timed Cycle

         a) Spin Time (**"SPIN TIME"**) from 30-seconds to 120-seconds in 1-second increments.

         b) Dwell (Stop) Time (**"STOP TIME"**) from 5-seconds to 10-seconds in 1-second increments.

B. SYSTEM PARAMETERS (PROGRAM LOCATIONS)

1. Cycle Adjustment Value from 0 to 99 in increments of one (1).
2. Manually Loaded Auto Cycle ("COOL DOWN TIME") from 0 to 99 minutes in 1 minute increments.
3. Audio Alert 0-10.
4. Lint Count 1-5.

C. FIXED PARAMETERS

1. Spin Time (**"SPIN TIME"**) is fixed at 2 minutes in forward and 2 minutes in reverse.
2. Dwell (Stop) Time (**"STOP TIME"**) is fixed at 5-seconds (in the Auto Mode) and is not adjustable.

SECTION IX

PHASE 7 AUTO CYCLE **(PATENT NO. 4,827,627)**
CYCLE ADJUSTMENT VALUES

GAS	
MODEL	**Adjustment Value**
ADG-30	68
ADG-50	70
ADG-60	65
ADG-75	70
ADG-78	70
ADG-81	70
ADG-115D	68
ADG-120ES	73
ADG-170SE	68
MLG-55	65
MLG-75	70
MLG-78	70
MLG-82	70
MLG-96	70
MLG-122	70
MLG-130	73
MLG-170/175	68
MLG-190	70
EURO-14	68
EURO-24	70
EURO-35	70

ELECTRIC	
MODEL	**Adjustment Value**
ADE-30	68
ADE-50	70
ADE-60	65
ADE-75	70
ADE-115	60
ADE-120ES	78
MLE-55	65
MLE-75	70
MLE-120ES	78
EURO-14	68
EURO-24	70
EURO-35	70

STEAM	
MODEL	**Adjustment Value**
ADS-30	68
ADS-60	65
ADS-75	70
ADS-115	68
ADS-120ES	65
ADS-170ES	70
MLS-55	65
MLS-75	70
EURO-14	68
EURO-24	70
EURO-35	70

IMPORTANT: If your particular model/dryer dryness levels **are not** shown in the above charts, contact the Continental Girbau Service Department for the appropriate factors for your particular dryer. When doing so, please have the dryer **model** and **serial numbers** available.

IMPORTANT: The adjustment values have been preprogrammed by the factory, but can be changed in the field. If the Phase 7 OPL microprocessor controller (computer) should fail and is being replaced. **THE REPLACEMENT PHASE 7 OPL MICROPROCESSOR CONTROLLER (COMPUTER) *MUST BE* REPROGRAMMED FOR THE SPECIFIC MODEL SHOWN IN THE ADJUSTMENT VALUE PARAMETERS CHARTS ABOVE. THE ADJUSTMENT VALUE LABEL IS LOCATED ON THE TOP CONTROL PANEL, BEHIND THE PHASE 7 KEYBOARD (TOUCH PAD) DISPLAY DOOR.**

NOTE: When fine-tuning the Auto Cycle for certain loads, if the material comes out wet, ***decrease*** the adjustment value, if the material comes out too dry, ***increase*** the adjustment value.

SECTION X

PHASE 7 OPL SYSTEM DIAGNOSTICS

IMPORTANT: YOU MUST DISCONNECT AND LOCKOUT THE ELECTRIC SUPPLY AND THE GAS SUPPLY OR THE STEAM BEFORE ANY COVERS OR GUARDS ARE REMOVED FROM THE MACHINE TO ALLOW ACCESS FOR CLEANING, ADJUSTING, INSTALLATION, OR TESTING OF ANY EQUIPMENT PER OSHA (Occupational Safety and Health Administration) **STANDARDS.**

ALL major circuits, including door, microprocessor temperature sensor, heat and motor circuits are monitored. The Phase 7 OPL microprocessor controller (computer) will inform the user, via the light emitting diode (L.E.D.) display of certain failure messages, along with L.E.D. indicators on the Input/Output (I/O) board on the back panel of the front right control door.

A. DIAGNOSTIC (L.E.D. DISPLAY) FAULT MESSAGES

MAIN DOOR OPENED - A main door is open when it **should be** closed.

EXHAUST HIGH TEMP FAULT - Indicates the temperature in the basket (tumbler) is above 220º F (104º C).

LINT ACCESS OPEN - Indicates the lint drawer is open and needs to be closed.

EXHAUST HIGH LIMIT FAULT - Indicates the temperature disk in the exhaust has opened.

SAIL SWITCH CLOSED FAULT - Sail switch is closed and **should be** opened.

SAIL SWITCH OPEN FAULT - Sail switch is open and **should be** closed.

BURNER HIGH LIMIT FAULT - Indicates the temperature disk in the burner has opened.

BURNER IGNITION CONTROL FAULT - No signal to gas valve from Direct Spark Ignition (DSI) module during trial for ignition time.

IGNITION FAULT - Gas valve did not remain open after trial for ignition. Indicates that no flame was detected.

FLAME FAULT - Indicates flame was detected during trial for ignition but failed sometime after. This condition must reoccur for five (5) retries before fault occurs.

ROTATION FAULT - Indicates the basket (tumbler) is not rotating.

OPEN EXHAUST TEMPERATURE PROBE - Indicates the exhaust temperature probe is open or shorted.

OPEN SENSOR ACTIVATED FIRE EXTINGUISHING (S.A.F.E.) SYSTEM PROBE FAULT- Indicates the temperature probe for the S.A.F.E. system is open or shorted.

LOW VOLTAGE FAULT - Indicates power has dropped below the operating values and will shut down.

BURNER PURGE FAULT - The gas valve signal is present during the prepurge time.

MODEL ERROR, ENTER CORRECT MODEL - The wrong model was selected for the dryer.

EE PROM FAULT ### - Error in memory location. The ### indicates the location of the fault.

B. INPUT/OUTPUT (I/O) BOARD LIGHT EMITTING DIODE (L.E.D.) INDICATORS

1. INPUTS

1. ESTOP – (RED L.E.D.) This L.E.D. will indicate the status of the E-STOP. If the E-STOP has been pressed, then the L.E.D. is ON.

2. GAS_V – (RED L.E.D.) This L.E.D. will indicate the status of the gas valve. If the gas valve is open (ON), then the L.E.D. is ON.

3. BRHL – (RED L.E.D.) This L.E.D. will indicate the status of the burner high limit disk. If the disk is closed (temperature below 330º F [166º C]), then the L.E.D. is ON.

4. SAIL – (RED L.E.D.) This L.E.D. will indicate the status of the sail switch. If the switch is closed, then the L.E.D. is ON.

5. EXHL – (RED L.E.D.) This L.E.D. will indicate the status of the exhaust high limit disk. If the disk is closed (temperature below 225º F [107º C]), then the L.E.D. is ON.

6. MAIN – (RED L.E.D.) This L.E.D. will indicate the status of the main door. If the door is closed, then the L.E.D. is ON.

7. LINT – (RED L.E.D.) This L.E.D. will indicate the status of the lint drawer. If the drawer is closed, then the L.E.D. is ON.

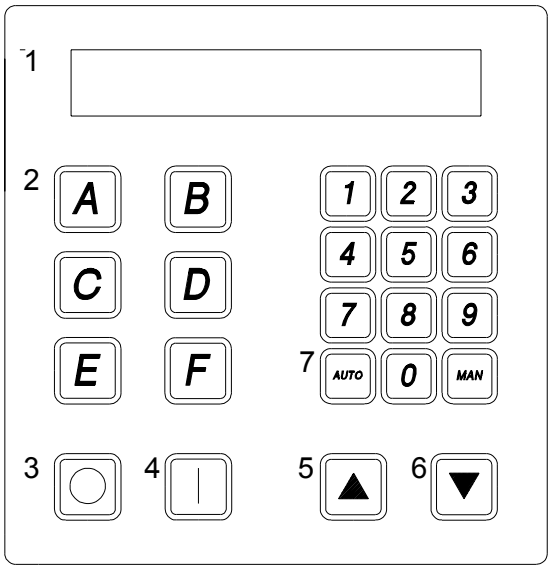
8. FUSE – (RED L.E.D.) This L.E.D. will indicate the status of the control voltage. If the POWER ON button is pressed (green button light is on), then the L.E.D. is ON.

2. OUTPUTS

9. AUX – (GREEN L.E.D.)	This is for a spare output to be programmed.
10. STEAM – (GREEN L.E.D.)	This light emitting diode (L.E.D.) will indicate the status of the steam injection output. If the request to turn on the steam injection is made, then the L.E.D. is ON.
11. _HEAT – (GREEN L.E.D.)	This L.E.D. will indicate the status of the heat output. If the request to turn on the heater is made, then the L.E.D. is ON.
12. AIR – (GREEN L.E.D.)	This L.E.D. will indicate the status of the air jet output. If the request to turn on the air jet is made, then the L.E.D. is ON.
13. REV – (GREEN L.E.D.)	This L.E.D. will indicate the status of the basket (tumbler) reverse direction output. If the request to tumble the drum in the reverse direction is made, then the L.E.D. is ON.
14. FWD – (GREEN L.E.D.)	This L.E.D. will indicate the status of the basket (tumbler) forward direction output. If the request to tumble the drum in the forward direction is made, then the L.E.D. is ON.
15. FAN – (GREEN L.E.D.)	This L.E.D. will indicate the status of the fan output. If the request to turn on the fan (blower) is made, then the L.E.D. is ON.

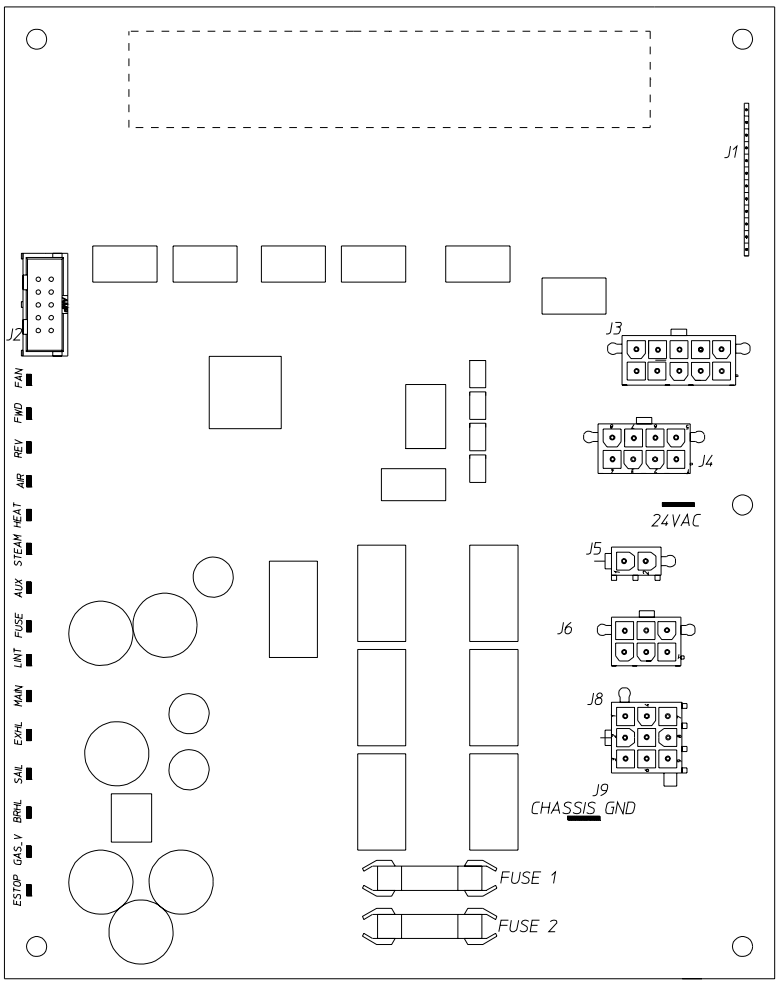
C. KEYBOARD (TOUCH PAD) LAYOUT

1. Dot Matrix Display
2. A-F Preprogrammed Cycles
3. Stop/Pause Button
4. Start Button
5. Increment Button
6. Decrement Button
7. One time auto (Dryness level) and manual (timed) Cycle



MC 8/02/01 MAN5846

NOTE: Fuse 1 is for computer power rated at 1/2-amp. If fuse blows it is a computer board fault. Fuse 2 is for 24V control power rated at 5-amps. If fuse blows it is a 24V control fault.



MAN5825

SECTION XI

CUSTOMER CUSTOM PARAMETER SETTINGS

This section is set aside for customer use where customer or specific parameters/settings can be documented, as programmed by them for their specific dryer. It is suggested that any parameter changes or customer cycles be documented here for future reference.

CUSTOMER USE

LANGUAGE: _____

MODEL: _____

SYSTEM TEMP: _____

DRYNESS LEVEL: _____

LINT COUNT: _____

AUDIO ALERT: _____

SCROLL TYPE: _____

SCROLL SPEED: _____

SPIN TIME: _____

STOP TIME: _____

WRINKLE GUARD AUDIO ALERT: _____

STEAM INJECTION: (OPTION) _____

1ST ON TIME: _____

OFF TIME: _____

2ND ON TIME: _____

OFF TIME: _____

3RD ON TIME _____

OFF TIME: _____

4TH ON TIME: _____

OFF TIME: _____

5TH ON TIME: _____

OFF TIME: _____

PROGRAMMED CYCLE A-F:

Cycle: _____

Cycle Type: **AUTO**

Reverse Mode: _____ (Option)

Dry Temp: _____

Dry Level: _____

Cool Down Time: _____

Cool Down Temp: _____

Controlled Cool Down: _____

Cycle Type: **MANUAL**

Reverse Mode: _____ (Option)

Dry Time: _____

Dry Temp: _____

Cool Down Time: _____

Cool Down Temp: _____

Spin Time: _____

Stop Time: _____

Controlled Cool Down: _____

Steam Injection: _____ (Option)

1ST ON TIME: _____

OFF TIME: _____

2ND ON TIME: _____

OFF TIME: _____

3RD ON TIME _____

OFF TIME: _____

4TH ON TIME: _____

OFF TIME: _____

5TH ON TIME: _____

OFF TIME: _____

PROGRAMMED CYCLE 0-40:

Cycle: _____

Cycle Type: **AUTO**

Reverse Mode: _____ (Option)

Dry Temp: _____

Dry Level: _____

Cool Down Time: _____

Cool Down Temp: _____

Controlled Cool Down: _____

Cycle Type: **MANUAL**

Reverse Mode: _____ (Option)

Dry Time: _____

Dry Temp: _____

Cool Down Time: _____

Cool Down Temp: _____

Spin Time: _____

Stop Time: _____

Controlled Cool Down: _____

Steam Injection: _____ (Option)

1ST ON TIME: _____

OFF TIME: _____

2ND ON TIME: _____

OFF TIME: _____

3RD ON TIME _____

OFF TIME: _____

4TH ON TIME: _____

OFF TIME: _____

5TH ON TIME: _____

OFF TIME: _____